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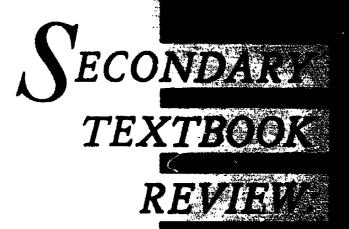
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ABSTRACT

This reference is intended for teachers who are responsible for selecting textbooks for biology or life science courses. The publication provides reviewers with a compilation of 10 biology and 7 life science textbook reviews. Using this document as a resource, teachers can save valuable time by reducing the number of books they review and pilot studies they conduct. For each textbook series, there is a description of the materials, and reviews of the student edition, the process skills in the student edition, the teachers edition of the laboratory manual, and the teachers edition of the laboratory manual. Factual inaccuracies in the materials are noted. (CW)

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SECONDARY

TEXTBOOK

REVIEW:

Biology and Life Science

Grades Nine Through Twelve





Publishing Information

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A list of other publications that are available from the Department may be found on page 403 of this publication.

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PREFACE

The Secondary Textbook Review: Biology and Life Science represents the State Department of Education's most recent effort to offer teachers a resource that they can use when they select textbooks. The importance of textbooks for instruction has been well documented. The lack of a variety of resources to assist teachers in selecting textbooks is also well known. Therefore, this review process, based on information from the Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve, the Model Curriculum Standards: Grades Nine Through Twelve, and the Statement on Preparation in Natural Science Expected of Entering Freshmen, is designed to fill this need at least partially. (For information about ordering these publications, see pages 403 and 404.)

Fifty-five persons donated their professional expertise and time to develop and execute this factual review of biology and life science textbooks. Included in that group are three representatives from the publishing industry who served as members of the Steering Committee. The findings from this review of life

science and biology textbooks appear on page x in the section, "Findings from This Review Process."

We welcome constructive comments that would enable this process to be more responsive to textbook selectors' needs. Please send your comments to the Office of Curriculum Framework and Textbook Development, California State Department of Education, P.O. Box 944272, Sacramento, CA 94244-2720.

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ACKNOWLEDGMENTS

The State Department of Education recognizes and extends its appreciation to everyone who assisted in developing this document.

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A special thanks is extended to Emie Gomez, who, working with staff members from the State Department of Education, undertook a major role in checking the reviews for consistency and accuracy.

The Secondary Textbook Review: Biology and Life Science was prepared by the Curriculum Framework and Textbook Development Unit and the Mathematics, Science, and Environmental Education Unit, California State Department of Education. Leadership and guidance for this process were provided by:

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FINDINGS FROM THIS REVIEW PROCESS

Because of the factual nature of this review, the findings noted in this section were strictly limited to the data obtained from the textbook reviewers.

Two overall findings emerged from the review:

- 1. The laboratory activities in both the students' textbooks and laboratory manuals focus on students' use of the lower-order process skills of observing, communicating, comparing, and organizing.
- 2. With few exceptions the students' textbooks and the laboratory manuals neither explain nor reinforce the higher-order process skills of relating, inferring, and applying.

Biology

Findings in the review of the ten biology textbooks included the following:

- 1. A wealth of information is provided about each of the major content areas in the biology review instrument; for example, "What is biology?" "Ecology," "Heredity," "Evolution," and so forth.
- 2. Every biology textbook contains information about human biology.

Life Science

Findings revealed by the review of seven life science textbooks were that:

- 1. The coverage of all animal phyla and of human physiology was strong; however, coverage of human diseases was universally weak; for example, the modes of transmission, symptoms, and methods of preventing sexually transmitted diseases.
- 2. Although many textbooks thoroughly covered the topic, "factual basis for evolution; e.g., anatomical evidence and fossil records," a majority of textbooks barely mentioned the "historical development of systems of classification; e.g., Aristotle and Linnaeus."
- 3. Of all the major content areas in the life science review instrument, ecological issues received the greatest emphasis.

To understand the implications of these findings, please read the next section, "Using This Resource," which captures not only the chronology but also the rationale for each step of the review process.





USING THIS RESOURCE

The Secondary Textbook Review: Biology and Life Science is intended as a resource for teachers who are responsible for selecting textbooks for biology or life science courses in high school. This publication provides teachers with a compilation of ten biology and seven life science textbook reviews. Using this document as a resource, teachers can save valuable time by reducing the number of books they review and pilot studies they conduct. After studying the reviews, teachers may wish to review two or three of the textbooks more thoroughly.

If teachers are interested in reviewing textbooks not included in this publication, they may adopt or adapt the review instruments in this document in order to reflect their districts' curricular emphases.

Factual Review

This process focuses on a "factual" review of content and process skills. To conduct a factual review, the textbook reviewers carefully note the pages in the textbook where a specific topic is explained or reinforced. After reviewing the entire book, the reviewers factually determine the degree of emphasis that each topic is given by tabulating the number of times the topic was covered. The factual decisions, then, are based on a quantitative analysis of content and process skills rather than on qualitative judgments. Teachers are the ones who must make these qualitative judgments based on course requirements, the number and complexity of concepts in the textbook, the students' skill levels, the motivation of specific groups of students, and other significant factors that influence learning. Teachers ultimately must weigh all of this information and more as they make decisions about the quality of specific textbooks.

Textbooks Reviewed

An informal survey of the 20 largest California school districts indicated which textbooks are used most in high school classrooms. Five of the biology

textbooks and six of the life science textbooks, top-ranked according to use, were reviewed. Thus, this document does not include reviews of all of the biology and life science textbooks used in high school classrooms. This restriction was necessary because of limited funding available for this project.

To gain a national perspective on current textbook usage, the staff sent a copy of a survey along with a copy of the *Model Curriculum Standards:* Grades Nine Through Twelve to more than 300 publishers. They were asked to study the Standards and to nominate for review those textbooks which reflected the philosophy and instructional strategies set forth in that document. The nominations were studied; and some textbooks, not widely used in California classrooms, were also included in the review process. Thus, ten biology and seven life science textbooks are reviewed in this document. Each publisher provided students' and teachers' editions of the textbooks and the laboratory manuals.

The Textbook Review Process

Early in the review process, a small Prototype Committee composed of science educators was called together to take the first step in developing factual review instruments for biology and life science textbooks. Their basic resource documents were the Model Curriculum Standards: Grades Nine Through Twelve, the Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve, and, additionally for biology, the Statement on Preparation in Natural Science Expected of Entering Freshmen. The Steering Committee, a larger group of science teachers and science curriculum experts, used the products from the Prototype Committee to develop the review instruments. The Steering Committee members also worked with the three basic resources used by the Prototype Committee as they developed separate review instruments for biology and life science textbooks.

Every review includes the four parts of the instrument and a textbook description which appears in the Appendix.



Part I. The Student's Edition

This section of the review instrument provides information about the extent to which the emphasis on *content* is given each of the topics in the student's edition of the textbooks reviewed. These topics were extracted from the three basic resources used by the Prototype and Steering committee members.

For each specific topic the "extent included" is determined by applying the following definitions:

High Emphasis means that this topic is explained and reinforced by many examples in several places throughout the textbook.

Substantial Emphasis means that the topic is explained and reinforced by many examples but primarily is limited to a single chapter.

Moderate Emphasis means that the topic is explained and reinforced by a few examples, but it is not the main subject of a chapter.

Limited Enchasis means that the topic is explained and/or illustrated by a single example.

Not Covered means that information about the topic is not present.

Please note the following:

If the topic has more than one element, the "Degree of Emphasis" indicated does not mean that each element is covered to that degree. For example, when a topic with multiple elements received an ME (Moderate Emphasis), it could mean that all of the elements were present in the textbook to a moderate degree. Conversely, ME may mean that only one or two of the elements were covered to a moderate degree.

Factual Inaccuracies

Teachers expect concepts and facts to be presented accurately in textbooks. When the textbook reviewers cited factual inaccuracies, staff with expertise in this content area researched the material in question. The inaccuracies that

were validated were brought to the attention of individual publishers. If the publishers responded by acknowledging the inaccuracy and gave assurances that it would be corrected in the next edition of the book being reviewed, a symbol denoting this agreement was placed in the section where the factual inaccuracy occurred. A footnote acknowledges the publisher's assurance. Specific information about the factual inaccuracies may be obtained from the Office of Curriculum Framework and Textbook Development; telephone (916) 323-2600.

Part II. Process Skills in the Student's Edition

This section focuses on teaching students the process skills appearing throughout the textbook.

Part III. The Teacher's Edition

The topics that the Steering Committee deemed to be especially helpful in teachers' editions of the students' textbooks appear in this section.

Part IV. The Student's Laboratory Manual

The student's laboratory manual is the focus of this section. Both content and process skills are reviewed.

Part V. The Teacher's Edition of the Laboratory Manual

This section includes topics, again identified by the Steering Committee, which are particularly pertinent in the teacher's edition of the laboratory manual.

Appendix

Factual textbook descriptions that contain information about the organization of the students' textbooks and related program components are compiled in this section.



1.

Evaluative Reviews from Other Sources

In contrast to the factual findings contained in this publication, evaluative reviews offer subjective judgments that deal with a textbook's quality. Districts choosing to consult one or more of the evaluative sources are encouraged first to work with staff members who will be using the new textbooks. This collaborative approach will focus and prioritize their collective concerns. The following evaluative review sources will provide additional points of view:

Science Books and Films

Published by:

The American Association for the Advancement of Science 1333 H Street, N.W. Washington, DC 20005

Quarterly Review of Biology

Published by:

Quarterly Review of Biology State University of New York Stony Brook, NY 11794-5275 Bookwatch Reviews

Published by:

The National Center for Science Education, Inc. P.O. Box 9477
Berkeley, CA 94709

Consumers' Guide to Biology Textbooks.

by Moyer, Wayne A., and William V. Mayer.

Washington, D.C.: People for the American Way, 1985.

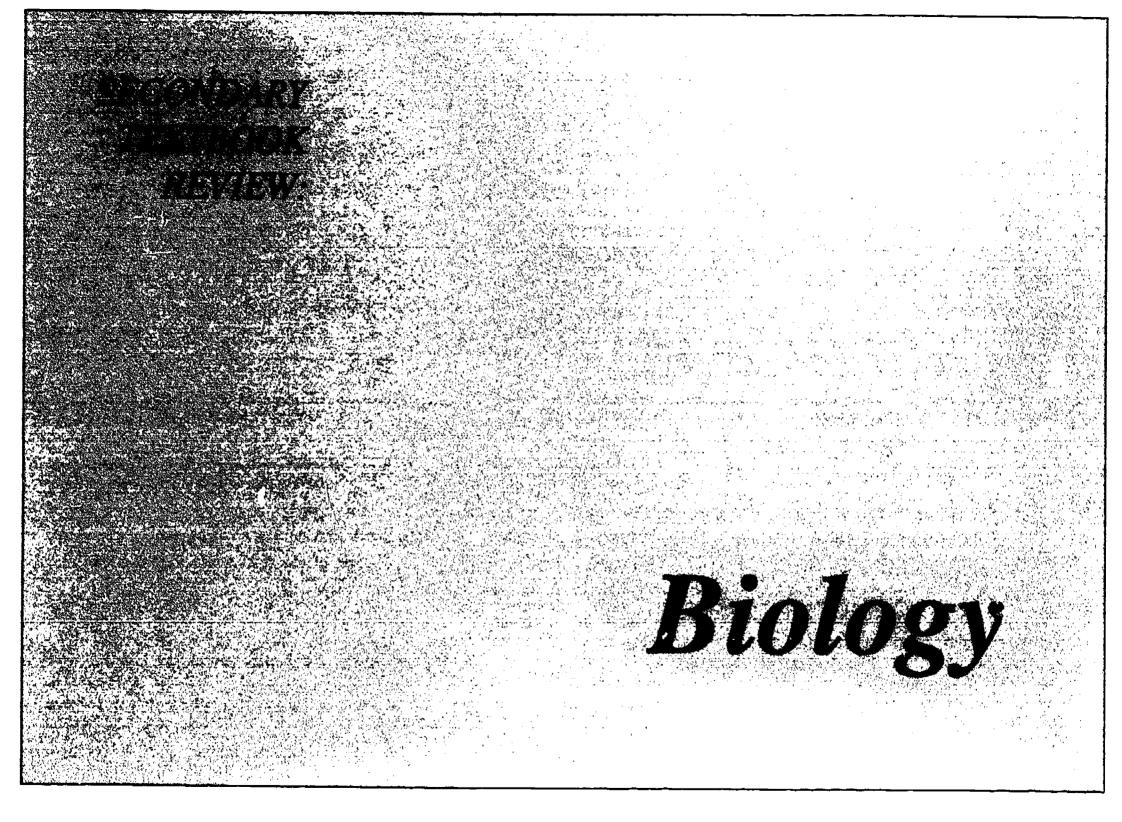
Available from:

People for the American Way 2000 M St., N.W., Suite 400 Washington, DC 20036

Conclusion

This publication reflects the time and expertise donated by educators and publishers who believe that this information has value for busy teachers. If biology and life science teachers use this resource when they select textbooks, then the efforts of everyone who participated in developing this document will be amply rewarded.







2.

PUBLISHER	TITLE	Copyright
Addison-Wesley Publishing Company	Biology: A Systems Approach	1988

I. BIOLOGY: CONTENT (STUDENT'S EDITION)

DEFINITION OF TERMS

DEGREE OF EMPHASIS

HIGH EMPHASIS means that the topic is explained and reinforced by many examples in several places throughout the textbook.

SUBSTANTIAL EMPHASIS means that the topic is explained and reinforced by many examples but primarily is limited to a single chapter.

MODERATE EMPHASIS means that the topic is explained and reinforced by a few examples, but it is not the main subject of a chapter.

LIMITED EMPHASIS means that the topic is explained and/or illustrated by a single example.

NOT COVERED means that information about the topic is not present.

_	Consent	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
. W	hat is biology?					
To	what extent does the textbook include discussions about:	;				
1.	The distinguishing characteristics of life; e.g., reproduction and growth? (Science Framework Addendum, p. 14)			x	; ; ;	
2.	Scientific reasoning; e.g., induction, deduction, observation, fact, hypothesis, theory, and inference? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1; Statement,* p. 9)	i		an an ann an	X	
3.	Research methods and tools of biologists; e.g., microscopes, centrifuge, and metiic measurement? (Science Framework Addendum, pp. 23, 26, 27)		,	X		
4.	Science, Technology, Individuals, and Society (STIS) issues; e.g., health, ethical concerns, careers, and economic impact? (Science Framework Addendum, p. 13; Statement, Number 13 and Number 16, p. 20)	x				



_	Factual inaccuracies, if any, in the preceding section [‡]					
В.	Ecology					
1	To what extent does the textbook include discussions about:]	
	 Diversity and stability in ecosystems? (Science Framework Addendum, pp. 41-42) 			x		
	 Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18) 			x		
	 Levels of ecological organization; e.g., communities, biomes, and populations? (Science Framework Addendum, pp. 39, 42; Standards, Number 4, p. S-5, and Number 16, p. S-11; Statement, Number 11, p. 19) 		х			
	4. The energy flow through the ecosystem; e.g., trophic levels and energy pyramids? (Science Framework Addendum, p. 40; Statement, Number 4, p. 18, and Number 11, p. 19)	- Long telephone		x		
	5. The impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18, and Number 11, p. 20)	x				
	Factual inaccuracies, if any, in the preceding section					
. ·	Heredity					
•	To what extent does the textbook include discussions about:					
	1. A historical perspective; e.g., Mendel, Morgan, Sutton, Watson, and Crick? (Science Framework Adder.dum, p. 8; Standards, Number 12, p. S-9, and Number 14, p. S-10; Statement, p. 12)		x			

NOTE: The secondary biology textbook review instrument is correlated with the following resource documents:

^{&#}x27;See "Factual Inaccuracies" on page xii.



[.] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{* *}Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

^{• &#}x27;The Statement on Preparation in Natural Science Expected of Entering Freshmen is cited as Statement.

The first two documents are published by the California State Department of Education. The last one listed was issued by the Academic Senates of the California Community Colleges, the California State University, and the University of California in cooperation with the California Round Table on Educational Opportunity. Each publication is available from the California State Department of Education (see pages 403 and 404 for ordering information).

PUBLISHER	Title	COPYRIGHT
Addison-Wesley Publishing Company	Biology: A Systems Approach	1988

I. BIOLOGY: CONTENT (STUDENT'S EDITION)—Continued

DEFINITION OF TERMS

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HIGH EMPHASIS means that the topic is explained and reinforced by many examples in several places throughout the textbook.

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MODERATE EMPHASIS means that the topic is explained and reinforced by a few examples, but it is not the main subject of a chapter.

LIMITED EMPHASIS means that the topic is explained and/or illustrated by a single example.

NOT COVERED means that information about the topic is not present.

	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
C. He	eredity—Continued					
2.	Scientific tools to model heredity; e.g., probability, statistics, and pedigrees? (Science Framework Addendum, p. 20; Standards, Number 14, p. S-10)			x		
3.	Cell cycle, meiosis, and mitosis? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 5, p. 18)		x			
4.	Chromosomes, genes, DNA, and RNA? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)		x			
5.	Biochemical aspects of heredity; e.g., transcription, translation, and protein synthesis? (Science Framework Addendum, p. 19; Statement, Number 7, p. 18)				x	



6.	Gene and chromosome mutations; e.g., inversions, insertions, and nonsense codons? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)			X	
7.	Human genetic variability; e.g., color blindness, baldness, and blood groups? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10; Statement, Number 7, p. 18)		x		
8.	The influence of heredity on health and disease; e.g., sickle-cell anemia, hemophilia, and Down's syndrome? (Standards, Number 12, p. S-9; Statement, Number 13, p. 20)	x			
9.	STIS issues; e.g., selective breeding and techniques and ethics of genetic engineering? (Science Framework Addendum, pp. 19–20; Statement, Number 5, p. 18, and Number 13, p. 20)		x		
	Factual inaccuracies, if any, in the preceding section			 	
	volution o what extent does the textbook include discussions about:				
1.	The genetic basis of evolution; e.g., genes as the source of variation? (Standards, Number 15, p. S-11; Statement, Number 6, p. 18)			x	
2.	A historical perspective; e.g., works of Lamarck, Wallace, and Darwin? (Science Framework Addendum, p. 8; Standards, p. S-1, and Number 15, p. S-11; Statement, p. 12, and Number 6, p. 18)			x	
3.	Scientific evidence; e.g., paleontology, genetics, biochemistry, and comparative anatomy? (Science Fra:nework Addendum, pp. 20, 31; Statement, Number 6, p. 18)		X		
4.	Fossil evidence for evolution; e.g., skeletons, pollen, dating methods, and sequence of fossil forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)			x	
5.	Evolutionary processes and their effects; e.g., selection, drift, adaptation, speciation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)		x		



Addison-Wesley Publishing Company	Biology: A Systems Approach	1988
PUBLISHER	TITLE	Copyright

I. BIOLOGY: CONTENT (STUDENT'S EDITION)—Continued

DEFINITION OF TERMS

DEGREE OF EMPHASIS

HIGH EMPHASIS means that the topic is explained and reinforced by many examples in several places throughout the textbook. SUBSTANTIAL EMPHASIS means that the topic is explained and reinforced by many examples but primarily is limited to a single chapter.

MODERATE EMPHASIS means that the topic is explained and reinforced by a few examples, but it is not the main subject of a chapter.

LIMITED EMPHASIS means that the topic is explained and/or illustrated by a single example.

NOT COVERED means that information about the topic is not present.

	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
D. Ev	volution—Continued					
6.	Scientific theories about the origin of life; e.g., inorganic to organic? (Science Framework Addendum, p. 24; Statement, Number 6, p. 18)			X		
7.	The history of life on earth; e.g., evolution from unicellular to multicellular and more specialized forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)				x	
8.	Human evolution; e.g., paleoanthropology and the work on "Lucy"? (Science Framework Addendum, p. 35; Statement, Number 6, p. 18)		x			
	Factual inaccuracies, if any, in the preceding section		<u></u>		<u> </u>	<u> </u>



E.	Classification				
	To what extent does the textbook include discussions about:				
	1. A historical perspective; e.g., Aristotle and Linnaeus? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x		
	2. Evolutionary relationships as the basis of classification? (Science Framework Addendum, pp. 20, 31; Statement, Number 8, p. 19)			x	
	3. Principles of classification; e.g., hierarchy and binomial nomenclature? (Standards, Number 3, p. S-5; Statement, Number 8, p. 19)	x			
•	4. Comparative anatomy, genetic structure (phenotypes), and biochemistry as data sets for classification?				
	(Science Framework Addendum, p. 20; Statement, Number 8, p. 19)		X		
	Factual inaccuracies, if any, in the preceding section				
F.	Chemistry				
	To what extent does the textbook include discussions about:				
	1. Atoms, molecules, chemical bonds, reactions, and the periodic table? (Science Framework Addendum, p. 24; Statement, Number 2, p. 17)	x			
	2. The structure and function of molecules in living things; e.g., proteins, nucleic acids, lipids, and polysaccarides? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement,				
	Number 2, p. 17)		X		
	3. Energy processes; e.g., laws of thermodynamics, diffusion, osmosis, and enzyme kinetics? (Science Framework Addendum, p. 19)		Х		
	Factual inaccuracies, if any, in the preceding section				
G.	Cells				
	To what extent does the textbook include discussions about:				
	1. A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x		



Addison-Wesley Publishing Company	Biology: A Systems Approach	1988
PUBLISHER	TITLE	COPYRIGHT

I. BIOLOGY: CONTENT (STUDENT'S EDITION)—Continued

DEFINITION OF TERMS

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	Content	High emphasi:	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
G. C	ells—Continued					:
2.	The structure and function of cells and cell components, including the similarities and differences between plant and animal cells? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 1, p. 17)	x				
3.	Cellular homeostasis? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)				X	
4.	Cellular respiration? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)		X			1
5. د ن	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9; Statement, Number 14, p. 18)		X			;



6.	Levels of organization, cells to systems? (Standards, Number 2, p. S-4; Statement, Number 3, p. 18)	x			
	Factual inaccuracies, if any, in the preceding section				
i. V	iruses				
T	o what extent does the textbook include discussions about:				
1.	The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14–15; Standards, Number 2, p. S-5; Statement, Number 10, p. 19)			x	
2.	A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x	, <u>t.</u> , <u></u>
3.	The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)			x	
4.	Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18)			x	,
5.	STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)		x		
	Factual inaccuracies, if any, in the preceding section				
M	Ionera				
T	o what extent does the textbook include discussions about:				
1.	The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19)			x	
2.	A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x	
3.	The distinguishing structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x		



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I. BIOLOGY: CONTENT (STUDENT'S EDITION)—Continued

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
. M	Ionera—Continued					
4.	. Reproduction? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)				x	
5.	Diseases caused by monera; e.g., strep throat, urinary tract infections, and STDs? (Science Framework Addendum, p. 27)			x		
6.	. Interrelationships with other living things and the environment; e.g., nitrogen fixation and decomposition? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			х		
7.	STIS issues; e.g., food production, waste disposal, pollution, and genetic engineering? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			X		
	Factual inaccuracies, if any, in the preceding section					



	Product			
J.	Protists To what extent does the textbook include discussions about:			
	1. The evolution, the phylogeny, and taxonomy of protists? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x		
	2. Protists' structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x		
	3. Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		x	
	4. Diseases caused by protists; e.g., gingivitis, dysentery, and malaria? (Science Framework Addendum, p. 27; Statement, Number 10, p. 19)	x		
	5. Interrelationships with other living things and the environment; e.g., symbiosis? (Standards, Number 4, p. S-5; Statement, Number 10, p. 19)		x	
	6. STIS issues; e.g., food sanitation, industrial products, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 10, p. 19)		х	
_	Factual inaccuracies, if any, in the preceding section			
<u>к.</u>	Fungi			
	To what extent does the textbook include discussions about:			
	1. The evolution, the phylogeny, and taxonomy of fungi? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x	
	2. A historical perspective; e.g., Fleming? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	
	3. The fungal structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x		
	4. Growth and development? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			+



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. Fu	ngi—Continued					
5.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)				x	
6.	Diseases caused by fungi; e.g., ringworm, yeast infection, athlete's foot, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5; Statement, Number 10, p. 19)			•	x	
7.	Interrelationships with other living things and the environment; e.g., decomposition, symbiosis (lichen), and mycorrhiza? (Standards, Number 10, p. S-8; Statement, Number 10, p. 19)				x	
8.	STIS issues; e.g., food (toxic mushrooms), beverages, antibiotics, and fungicides? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			x		4



	Factual inaccuracies, if any, in the preceding section				
L. P	lants				
T	o what extent does the textbook include discussions about:				
1.	The evolution, the phylogeny, and taxonomy of plants? (Standards, Number 3, p. S-5; Statement, Number 10, p. 19)			x	
2.	Plant structures and their functions; e.g., photosynthesis, food storage, and transport? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9; Statement, Number 10, p. 19)		x		
3.	Adaptations for land existence? (Science Framework Addendum, pp. 18, 22, 24; Statement, p. 16, Number 10, p. 19)			х	
4.	Growth and development, including the role of hormones? (Standards. Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		x		
5.	Propagation and reproduction, including role of pollinators? (Science Framework Addendum, p. 25; Statement, Number 5, p. 18)	х			
6.	Response to stimuli? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8)		х		
7.	Health and disease states of plants; e.g., nutrient deficiencies and parasites? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)				x
8.	STIS issues; e.g., horticulture and environmental concerns, timber harvest, defolients, and endangered species? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)			x	
-	Factual inaccuracies, if any, in the preceding section		And the first of the second se		
М. А	nimals		1		1 1 1
T	o what extent does the textbook include discussions about:			1	•
1.	The taxonomic diversity of animals? (Science Framework Adaendum, p. 29; Statement, Number 9, p. 19)	x			•



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M. Animals—Continued					
2. Invertebrates					
To what extent does the textbook include discussions about:					
a. Invertebrate structures and their functions; e.g., systems, symmetry? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)		x			
b. Evolutionary relationships and fossil histories? (Standards, Number 15, p. S-11; Statement, p. 16, and Number 9, p. 19)	-		x		
c. Adaptations; e.g., for feeding and locomotion? (Standards, Number 15, p. S-11)		x			
d. Growth, development, and embryology? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)				x	



				
e	Reproduction; e.g., asexual and sexual? (Science Frame.vork Addendum, p. 30; Standards, Number 13, p. S-10; Statement, Number 5, p. 18, and Number 9, p. 19)		x	
f.	Behavior, e.g., innate versus learned, social behaviors, communication, and reproductive behaviors? (Standards, Number 5, p. S-6)		x	
g	Health and diseases; e.g., vectors and parasitism? (Science Framework Addendum, p. 25; Statement, Number 13, p. 20)			x
h	STIS issues; e.g., agriculture, food, pests, pest control, and aquaculture? (Standards, Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 19)			x
3. C	hordates (nonhuman)			
T	o what extent does the textbook include discussions about:			
а	Chordate structures and their functions; e.g., comparative anatomy and physiology and classical chordate characteristics? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8; Statement, Number 9, p. 19)			x
b	Evolutionary relationships and fossil histories? (Science Framework Addendum, pp. 15, 18; Statement, p. 16, and Number 9, p. 19)			x
c	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, p. 30)			x
đ	Growth, development, and embryology? (Science Framework Addendum, p. 31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	x		
e	Reproduction? (Standards, Number 13, p. S-10; Statement, Number 5, p. 18)		X	
ſ.	Behavior, e.g., innate versus learned, social behaviors, or communications? (Standards, Number 5, p. S-6; Statement, Number 9, p. 19)	х		
g	STIS issues; e.g., wildlife management, live animals used in research, veterinary medicine, and endangered species? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 20)			x



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued				 	
4. Vertebrates (Human)	1			; †	
To what extent does the textbook include discussions about: a. Structure, function, and maintenance of major body systems:				† ; ;	
(1) Nervous system and sense organs?	; ;	X		1	!
(2) Circulatory system?		X		† · · · · · · · · · · · · · · · · · · ·	
(3) Digestive system?		X			
(4) Respiratory system?		X			
(5) Reproductive system?		X		!	† · · · · · · · · · · · · · · · · · · ·



	(6) Musculoskele al system?	X		
	(7) Excretory system?	х		
	(8) Integumentary system?		X	
	(9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20)	x		
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19)	x		
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37)			x
d.	Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20)	х		
e.	Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20)		x	
f.	Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12)	x		
g.	Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19)		x	
h.	STIS issues; e.g., substance abuse? (Science Framework Addendum, p. 35)		x	
i.	STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Framework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 13 and Number 16, p. 20)		x	
- · · · · · · · · · · · · · · · · · · ·	Factual inaccuracies, if any, in the preceding section			



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II. BIOLOGY: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.



INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- · Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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REVIEW OF PROCESS SKILLS'

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	x				
2. Communicating?	x				
3. Comparing?		x			
4. Organizing?			X		194
5. Relating?			X		
6. Inferring?			,	X	
7. Applying?				X	

Science Framework Addendum, p. 5.



^{*}Science Framework Addendum, pp. 4-5.

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III. BIOLOGY: TEACHER'S EDITION

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)		x		
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)			x	
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			x	
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)		x		



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5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")		x
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)	x	
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	X	
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)		x
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	X	
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)		x



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IV. BIOLOGY: STUDENT'S LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
A. To	what extent does the student's laboratory manual include:				
1.	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	х			
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)		X		- · · · · · · · · · · · · · · · · · · ·
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		X		



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5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		x		
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				x
. To	what extent are the following process skills taught throughout the laboratory manual:*				
1.	Observing?	x			
2.	Communicating?	x			
3.	Comparing?	X			
4.	Organizing?		x		
5.	Relating?			X	
6.	Inferring?		X		
7.	Applying?			x	

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. BIOLOGY: TEACHER'S EDITION OF THE LABORATORY MANUAL

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	Conte: #	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent down are cacher's edition of the laboratory manual include:				
1.	Information that encourages the and red responsibility for safety in the science laboratory? (Science Framework Addendum, and 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)			x	
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)			х	
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			Х	
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x		



5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)				x
6.	Resource lists for acquiring:		· •··		
	a. Equipment?	x			
	b. Chemicals?	х			
-	c. Supplies?	x	· · · · · · · · · · · · · · · · · · ·		
***	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	x	·		
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)	x			
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				x
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)		x		
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)			x	



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-	Content	High e.nphasis	Substantial emphasis	Moderate empha:is	Limited emphasis	Not covered
A.	What is biology?				<u> </u>	
	To what extent does the textbook include discussions about:				1	
	1. The distinguishing characteristics of life; e.g., reproduction and growth? (Science Framework Addendum, p. 14)		x		· · · · · · · · · · · · · · · · · · ·	
	 Scientific reasoning; e.g., induction, deduction, observation, fact, hypothesis, theory, and inference? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1; Statement,* p. 9) 		x			
	 Research methods and tools of biologists; e.g., microscopes, centrifuge, and metric measurement? (Science Framework Addendum, pp. 23, 26, 27) 		x			
	4. Science, Technology, Individuals, and Society (STIS) issues; e.g., health, ethical concerns, careers, and economic impact? (Science Framework Addendum, p. 13; Statement, Number 13 and Number 16, p. 20)	x				



Factual inaccuracies, if any, in the preceding section [‡]			
B. Ecology			
To what extent does the textbook include discussions about:			
1. Diversity and stability in ecosystems? (Science Framework Addendum, pp. 41-42)	x		
 Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18) 	x		
3. Levels of ecological organization; e.g., communities, biomes, and populations? (Science Frumework Addendum, pp. 39, 42; Standards, Number 4, p. S-5, and Number 16, p. S-11; Statement, Number 11, p. 19)	x		
4. The energy flow through the ecosystem; e.g., trophic levels and energy pyramids? (Science Framework Addendum, p. 46, Statement, Number 4, p. 18, and Number 11, p. 19)		x	
5. The impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18, and Number 11, p. 29)	x		
Factual inaccuracies, if any, in the preceding section			
C. Heredity			
To what extent does the textbook include discussions about:			

NOTE: The secondary biology textbook review instrument is correlated with the following resource documents:

^{*}See "Factual Inaccuracies" on page xii.



[•] The Science Framework Addendum for California Public Schools: Kinde garten and Grades One Through Twelve is cited as Science Framework Addendum.

^{. *}Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

^{. &#}x27;The Statement on Preparation in Natural Science Expected of Entering Freshmen is cited as Statement.

The first two documents are published by the California State Department of Education. The last one listed was issued by the Academic Senates of the California Community Colleges, the California State University, and the University of California in cooperation with the California Round Table on Educational Opportunity. Each publication is available from the California State Department of Education (see pages 403 and 404 for ordering information).

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
C. H	eredity—Continued					
2.	Scientific tools to model heredity; e.g., probability, statistics, and pedigrees? (Science Framework Addendum, p. 20; Standards, Number 14, p. S-10)	x				
3.	Cell cycle, meiosis, and mitosis? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 5, p. 18)		x			
4.	Chromosomes, genes, DNA, and RNA? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)	x				
5.	Biochemical aspects of heredity; e.g., transcription, translation, and protein synthesis? (Science Framework Addendum, p. 19; Statement, Number 7, p. 18)		x			



6.	Gene and chromosome mutations; e.g., inversions, insertions, and nonsense codons? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)		x	
7.	Human genetic variability; e.g., color blindness, baldness, and blood groups? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10; Statement, Number 7, p. 18)		x	
8.	The influence of heredity on health and disease; e.g., sickle-cell anemia, hemophilia, and Down's syndrome? (Standards, Number 12, p. S-9; Statement, Number 13, p. 20)	x		;
9.	STIS issues; e.g., selective breeding and techniques and ethics of genetic engineering? (Science Framework Addendum, pp. 19-20; Statement, Number 5, p. 18, and Number 13, p. 20)		x	
	Factual inaccuracies, if any, in the preceding section			
D. Ev	volution		1	!
To	what extent does the textbook include discussions about:	;		!
1.	The genetic basis of evolution; e.g., genes as the source of variation? (Standards, Number 15, p. S-11; Statement, Number 6, p. 18)		X	:
2.	A historical perspective; e.g., works of Lamarck, Wallace, and Darwin? (Science Framework Addendum, p. 8; Standards, p. S-1, and Number 15, p. S-11; Statement, p. 12, and Number 6, p. 18)		x	
3.	Scientific evidence; e.g., paleontology, genetics, biochemistry, and comparative anatomy? (Science Framework Addendum, pp. 20, 31; Statement, Number 6, p. 18)		x	
4.	Fossil evidence for evolution; e.g., skeletons, pollen, dating methods, and sequence of fossil forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	- · · · · · · · · · · · · · · · · · · ·	x	
5.	Evolutionary processes and their effects; e.g., selection, drift, adaptation, speciation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)		x	, , , , , , , , , , , , , , , , , , ,



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D. E	volution—Continued					
6.	Scientific theories about the origin of life; e.g., inorganic to organic? (Science Framework Addendum, p. 24; Statement, Number 6, p. 18)			x		
7.	The history of life on earth; e.g., evolution from unicellular to multicellular and more specialized forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	x				
8.	Human evolution; e.g., paleoanthropology and the work on "Lucy"? (Science Framework Addendum, p. 35; Statement, Number 6, p. 18)		x			
	Factual inaccuracies, if any, in the preceding section			<u> </u>	.	



E.	CI	lassification					
	To	what extent does the textbook include discussions about:					
	1.	A historical perspective; e.g., Aristotle and Linnaeus? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x		
	2.	Evolutionary relationships as the basis of classification? (Science Framework Addendum, pp. 20, 31; Statement, Number 8, p. 19)				х	
	3.	Principles of classification; e z., hierarchy and binomial nomenclature? (Standards, Number 3, p. S-5; Statement, Number 8, p. 19)		x			
	4.	classification?	<u> </u>				
		(Science Framework Addendum, p. 20; Statement, Number 8, p. 19)	X				
_		Factual inaccuracies, if any, in the preceding section			#		
F.	Cł	hemistry	•				
		what extent does the textbook include discussions about:					
	1.	F toms, molecules, chemical bonds, reactions, and the periodic table? (Science Framework Addendum, p. 24; Statement, Number 2, p. 17)		x			
	2.	The structure and function of molecules in living things; e.g., proteins, nucleic acids, lipids, and polysaccarides? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 2, p. 17)		x			
	3.	Energy processes; e.g., laws of thermodynamics, diffusion, osmosis, and enzyme kinetics? (Science Framework Addendum, p. 19)	x		÷		
		Factual inaccuracies, if any, in the preceding section	1	-	•		
G	Ce	·lic	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	:		
J.		what extent does the textbook include discussions about:					•
	1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x		



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G. C	ells—Continued					
2.	The structure and function of cells and cell components, including the similarities and differences between plant and animal cells? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 1, p. 17)		х			
3.	Cellular homeostasis? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)			· · · · · · · · · · · · · · · · ·	x	
4.	Cellular respiration? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)		X	Managar de la galega de estadad		
5.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9; Statement, Number 14, p. 18)	x				£



6	. Prels of organization, cells to systems? (Standards, Number 2, p. S-4; Statement, Number 3, p. 18)		x		
	Factual inaccuracies, if any, in the preceding section				
н. у	/iruses				
7	o what extent does the textbook include discussions about:				
1	. The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)			x	
2	. A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x	
3	. The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)			x	
4	. Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18)		х		
5	. STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)		x		
	Factual inaccuracies, if any, in the preceding section				
I. N	Aonera				
r	o what extent does the textbook include discussions about:				1
1	. The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19)		x		
2	. A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		х		
3	. The distinguishing structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x			



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I. N	Ionera—Continued					
4	Reproduction? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	, e		X		
5	Diseases caused by monera; e.g., strep throat, urinary tract infections, and STLs? (Science Framework Addendum, p. 27)			x		
6	6. Interrelationships with other living things and the environment; e.g., nitrogen fixation and decomposition? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			X		
7	STIS issues; e.g., food production, waste disposal, pollution, and genetic engineering? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)		x			
·	_ Factual inaccuracies, if any, in the preceding section		<u> </u>	 		



. P	rotists				
Te	o what extent does the textbook include discussions about:				
1.	The evolution, the phylogeny, and taxonomy of protists? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x		
2.	Protists' structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x			
3.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	x			
4.	Diseases caused by protists; e.g., gingivitis, dysentery, and malaria? (Science Framework Addendum, p. 27; Statement, Number 10, p. 19)		x		
5.	Interrelationships with other living things and the environment; e.g., symbiosis? (Standards, Number 4, p. S-5; Statement, Number 10, p. 19)		x		
6.	STIS issues; e.g., food sanitation, industrial products, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 10, p. 19)			x	
	Factual inaccuracies, if any, in the preceding section				
. Fı	ungi				
To	o what extent does the textbook include discussions about:				1
1.	The evolution, the phylogeny, and taxonomy of fungi? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	† 	x		
2.	A historical perspective; e.g., Fleming? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			X	
3.	The fungal structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	,	X		
4.	Growth and development? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		X		



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		Consens	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
K. 1	Fun	ngi—Continued				 	
	5.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			x		
	6.	Diseases caused by fungi; e.g., ringworm, yeast infection, athlete's foot, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5; Statement, Number 10, p. 19)			X		
	7.	Interrelationships with other living things and the environment; e.g., decomposition, symbiosis (lichen), and mycorrhiza? (Standards, Number 10, p. S-8; Statement, Number 10, p. 19)			x		
Ci.	8.	STIS issues; e.g., food (toxic mushrooms), beverages, antibiotics, and fungicides? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			x		Sig



	Factual inaccuracies, if any, in the preceding section		1:	1	!	•
Pla	ants		:	,	1 1 1	:
To	what extent does the textbook include discussions about:		;		,	
1.	The evolution, the phylogeny, and taxonomy of plants? (Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x		· · · · · · · · · · · · · · · · · · ·	
2.	Plant structures and their functions; e.g., photosynthesis, food storage, and transport? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9; Statement, Number 10, p. 19)		x			
3.	Adaptations for land existence? (Science Framework Addendum, pp. 18, 22, 24; Statement, p. 16, Number 10, p. 19)			x		
4.	Growth and development, including the role of hormones? (Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)			X		
5.	Propagation and reproduction, including role of pollinators? (Science Franework Addendum, p. 25; Statement, Number 5, p. 18)	-	X			
6.	Response to stimuli? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8)		:	X		
7.	Health and disease states of plants; e.g., nutrient deficiencies and parasites? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)				X	
8.	STIS issues; e.g., horticulture and environmental concerns, timber harvest, defolients, and endangered species? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)		• • • • •	X	***************************************	•
	Factual inaccuracies, if any, in the preceding section	•	•	general and a	·• · - · · ·	-• · · · ·
. Ar	nimals	٦				
То	what extent does the textbook include discussions about:					
1.	The taxonomic diversity of animals? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	X				
-	SI 5	•	•		•	



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	ww = -	Contens	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. A	nim:	als—Continued				1	1
2.	Inv	vertebrates	,	<u>;</u>	i	1	•
	То	what extent does the textbook include discussions about:	, , ,	,		ı	1
	a.	Invertebrate structures and their functions; e.g., systems, symmetry? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	; x				
	b.	Evolutionary relationships and fossil histories? (Standards, Number 15, p. S-11; Statement, p. 16, and Number 9, p. 19)	1		X	!	
	c.	Adaptations; e.g., for feeding and locomotion? (Standards, Number 15, p. S-11)	X			!	
*	d.	Growth, development, and embryology? (Science Framework Addendum, pp. 30–31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	x				



е.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10; Statement, Number 5, p. 18, and Number 9, p. 19)	x		
f.	Behavior, e.g., innate versus learned, social behaviors, communication, and reproductive behaviors? (Standards, Number 5, p. S-6)		x	
g.	Health and diseases; e.g., vectors and parasitism? (Science Framework Addendum, p. 25; Statement, Number 13, p. 20)		x	
h.	STIS issues; e.g., agriculture, food, pests, pest control, and aquaculture? (Standards, Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 19)		x	
3. Ch	nordates (nonhuman)			
To	what extent does the textbook include discussions about:			
a.	Chordate structures and their functions; e.g., comparative anatomy and physiology and classical chordate characteristics? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8; Statement, Number 9, p. 19)	x		
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, pp. 15, 18; Statement, p. 16, and Number 9, p. 19)	х		
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, p. 30)	x		
d.	Growth, development, and embryology? (Science Framework Addendum, p. 31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		x	
e.	Reproduction? (Standards, Number 13, p. S-10; Statement, Number 5, p. 18)		х	
f.	Behavior, e.g., innate versus learned, social behaviors, or communications? (Standards, Number 5, p. S-6; Statement, Number 9, p. 19)		х	
g.	STIS issues; e.g., wildlife management, live animals used in research, veterinary medicine, and endangered species? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 20)		x	



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued					
4. Vertebrates (Human)					
To what extent does the textbook include discussions about:				1	1
a. Structure, function, and maintenance of major body systems:	•			: !	
(1) Nervous system and sense organs?		X		; •	
(2) Circulatory system?		X	·	1	
(3) Digestive system?		X		† 	1
(4) Respiratory system?		X	• • • • • • • • • • • • • • • • • • • •		:
(5) Reproductive system?		X			4.



<u> </u>	(6) Musculoskeletal system?	x		1	
	(7) Excretory system?		X		
	(8) Integumentary system?		x		
	(9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20)	х			
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19)	х			
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37)	х			
đ.	Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20)	x			
c.	Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20)			x	
f.	Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12)		x		
g.	Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19)	x			
h.	STIS issues; e.g., substance abuse? (Science Framework Addendum, p. 35)	x			
i.	STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Framework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 13 and Number 16, p. 20)		x		
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II. BIOLOGY: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Senson comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

105

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Centrolling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major to concepts of science.



INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- · Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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REVIEW OF PROCESS SKILLS

То	what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderaie emphasis	Limited emphasis	Not covered
1.	Observing?	x				
2.	Communicating?	X	1		1	
3.	Comparing?	X				•
4.	Organizing?	manna an read forms or the action of	X	• • • • • • • • • • • • • • • • • • •	# 14 14	
5.	Relating?	· 	· • · · · · · · · · · · · · · · · · · ·	X	• • • • • • • • • • • • • • • • • • •	
6.	Inferring?		-	X		
7.	Applying?	بير و	· • • • · · · · · · · · · · · · · · · ·	X		openia

Science Framework Addendum, p. 5.



^{*}Science Framework Addendum, pp. 4-5.

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III. BIOLOGY: TEACHER'S EDITION

DEFINITION OF TERMS

DEGREE OF EMPHASIS

HIGH EMPHASIS means that the feature is covered and is illustrated by many examples.

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LIMITED EMPHASIS means that the feature is covered and/or illustrated by a single example.

NOT COVERED means that the feature is not covered.

	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)	x			
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	x		,	
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		х		
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)	х			



5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")			x
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)			x
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	x		
9,	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)		x	
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	x		
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendam., p. 104, "Assessment and Evaluation," Number 1 and Number 2)			x





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IV. BIOLOGY: STUDENT'S LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
А. Т	o what extent does the student's laboratory manual include:				
1	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	x			
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	x			
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	x			
		<u></u>			<u> </u>



5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	x			
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			x	
	what extent are the following process skills taught throughout the laboratory manual:* Observing?		x		
2.	Communicating?		Х		
3.	Comparing?		X		
4.	Organizing?		Х		-
5.	Relating?		Х		
6.	Inferring?		X		
7.	Applying?			X	

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. BIOLOGY: TEACHER'S EDITION OF THE LABORATORY MANUAL

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	Consens	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for se ety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)		x		
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)		X	· · · · · · · · · · · · · · · · · · ·	
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		X		
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process." Number 5)	x			1



5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)			x	
6.	Resource lists for acquiring:				
	a. Equipment?	X			
	b. Chemicals?	х			
	c. Supplies?	x			
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	x			
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)	x			
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)		x		
9,	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)		x		
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)		x		



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1. BIOLOGY: CONTENT (STUDENT'S EDITION)

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	Content	High emphasis	Substantial emphasis	Moderale emphasis	Limited emphasis	Not covered
1. W	hat is biology?					
T	what extent does the textbook include discussions about:		1		;	
1.	The distinguishing characteristics of life; e.g., reproduction and growth? (Science Framework Addendum, p. 14)	; ;	x			
2.	Scientific reasoning; e.g., induction, deduction, observation, fact, hypothesis, theory, and inference? (Science Framework Addandum, pp. 8, 12; Standards,* p. S-1; Statement,* p. 9)		x			
3.	Research methods and tools of biologists; e.g., microscopes, centrifuge, and metric measurement? (Science Framework Addendum, pp. 23, 26, 27)		x	NO. 10		
4.	Science, Technology, Individuals, and Society (STIS) issues; e.g., health, ethical concerns, careers, and economic impact? (Science Framework Addendum, p. 13; Statement, Number 13 and Number 16, p. 20)		x			



Factual inaccuracies, if any, in the preceding section[‡] B. Ecology To what extent does the textbook include discussions about: 1. Diversity and stability in ecosystems? (Science Framework Addendum, pp. 41-42) X 2. Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement. Number 4, p. 18) X 3. Levels of ecological organization; e.g., communities, biomes, and populations? (Science Framework Addendum, pp. 39, 42; Standards, Number 4, p. S-5, and Number 16, p. S-11; Statement, Number 11, p. 19) X 4. The energy flow through the ecosystem; e.g., trophic levels and energy pyramids? (Science Framework Addendum, p. 40; Statement, Number 4, p. 18, and Number 11, p. 19) X

C. Heredity

To what extent does the textbook include discussions about:

Factual inaccuracies, if any, in the preceding section

resource depletion, and recycling?

Number 4, p. 18, and Number 11, p. 20)

A historical perspective; e.g., Mendel, Morgan, Sutton, Watson, and Crick? (Science Framework Addendum, p. 8; Standards, Number 12, p. S-9, and Number 14, p. S-10; Statement, p. 12)

5. The impact of society on the natural environment; e.g., pollution, endangered species.

(Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement,

NOTE: The secondary biology textbook review instrument is correlated with the following resource documents:

^{*}See "Factual Inaccuracies" on page xii.



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[•] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum

^{. *}Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

[.] The Statement on Preparation in Natural Science Expected of Entering Freshmen is cited as Statement.

The first two documents are published by the California State Department of Education. The last one listed was issued by the Academic Senates of the California Community Colleges, the California State University, and the University of California in cooperation with the California Round Table on Educational Opportunity. Each publication is available from the California State Department of Education (see pages 403 and 404 for ordering information).

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		Consens	tligh emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
c.	He	eredity—Continued					
	2.	Scientific tools to model heredity; e.g., probability, statistics, and pedigrees? (Science Framework Addendum, p. 20; Standards, Number 14, p. S-10)	x				
	3.	Cell cycle, meiosis, and mitosis? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 5, p. 18)	x				
	4.	Chromosomes, genes, DNA, and RNA? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)	x				
_ 25	5.	Biochemical aspects of heredity; e.g., transcription, translation, and protein synthesis? (Science Framework Addendum, p. 19; Statement, Number 7, p. 18)		x			



 ک.	6.	Gene and chromosome mutations; e.g., inversions, insertions, and nonsense codons? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)		x			
	7.	Human genetic variability; e.g., color blindness, baldness, and blood groups? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10; Statement, Number 7, p. 18)			x		
	8.	The influence of heredity on health and disease; e.g., sickle-cell anemia, hemophilia, and Down's syndrome? (Standards, Number 12, p. S-9; Statement, Number 13, p. 20)		X			•
	9.	STIS issues; e.g., selective breeding and techniques and ethics of genetic engineering? (Science Framework Addendum, pp. 19–20; Statement, Number 5, p. 18, and Number 13, p. 20)		x			
		Factual inaccuracies, if any, in the preceding section		1			
D.	Ev	volution					
	То	what extent does the textbook include discussions about:		!	;	1	
	1.	The genetic basis of evolution; e.g., genes as the source of variation? (Standards, Number 15, p. S-11; Statement, Number 6, p. 18)		X	:	1	
	2.	A historical perspective; e.g., works of Lamarck, Wallace, and Darwin? (Science Framework Addendum, p. 8; Standards, p. S-1, and Number 15, p. S-11; Statement, p. 12, and Number 6, p. 18)			X	-	
	3.	Scientific evidence; e.g., paleontology, genetics, biochemistry, and comparative anatomy? (Science Framework Addendum, pp. 20, 31; Statement, Number 6, p. 18)		x			
	4.	Fossil evidence for evolution; e.g., skeletons, pollen, dating methods, and sequence of fossil forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	x	- - -	1 · · · · · · · · · · · · · · · · · · ·	 	
	5.	Evolutionary processes and their effects; e.g., selection, drift, adaptation, speciation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)	x		* · · · · · · · · · · · · · · · · · · ·		-



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
D. E	volution—Continued					
6.	Scientific theories about the origin of life; e.g., inorganic to organic? (Science Framework Addendum, p. 24; Statement, Number 6, p. 18)			x		
7.	The history of life on earth; e.g., evolution from unicellular to multicellular and more specialized forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)		x			
8.	Human evolution; e.g., paleoanthropology and the work on "Lucy"? (Science Framework Addendum, p. 35; Statement, Number 6, p. 18)		X			
ل	Factual inaccuracies, if any, in the preceding section		<u></u>		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	4 (



E.	Cl	assification				
	То	what extent does the textbook include discussions about:				•;
ት ሊ፤ 	1.	A historical perspective; e.g., Aristotle and Linnaeus? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x	
	2.	Evolutionary relationships as the basis of classification? (Science Framework Addendum, pp. 20, 31; Statement, Number 8, p. 19)	x			
	3.	Principles of classification; e.g., hierarchy and binomial nomenclature? (Standards, Number 3, p. S-5; Statement, Number 8, p. 19)		x		·
	4.	Comparative anatomy, genetic structure (phenotypes), and biochemistry as data sets for classification?				
		(Science Framework Addendum, p. 20; Statement, Number 8, p. 19)			X	
		Factual inaccuracies, if any, in the preceding section				
F.	Ch	nemistry				
	To	what extent does the textbook include discussions about:				
	1.	Atoms, molecules, chemical bonds, reactions, and the periodic table? (Science Framework Addendum, p. 24; Statement, Number 2, p. 17)		x		
	2.	The structure and function of molecules in living things; e.g., proteins, nucleic acids, lipids, and polysaccarides? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 2, p. 17)	x			
	3.	Energy processes; e.g., laws of thermodynamics, diffusion, osmosis, and enzyme kinetics? (Science Framework Addendum, p. 19)		x		
		Factual inaccuracies, if any, in the preceding section				
G.	Ce	ells				
	То	what extent does the textbook include discussions about:		1		
	1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Science Framework Addendum, p. 9; Standards, p. S-1; Statement, p. 12)			x	



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G. C	Cells—Continued					
2.	The structure and function of cells and cell components, including the similarities and differences between plant and animal cells? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 1, p. 17)		X			; ; ;
3.	Cellular homeostasis? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)	1	* 	X	· · · · · · · · · · · · · · · · · · ·	1
4.	Cellular respiration? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)		X			
5.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9; Statement, Number 14, p. 18)	x	+ - 4 ;	· · · · · · · · · · · · · · · · · · ·		1



6. Levels of organization, cells to systems? (Standards, Number 2, p. S-4; Statement, Number 3, p. 18)		x	,
Factual inaccuracies, if any, in the preceding section			न
H. Viruses			
To what extent does the textbook include discussions about:			
1. The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x	
2. A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)	х		
3. The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x	
4. Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18)		x	
 STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19) 	x		
Factual inaccuracies, if any, in the preceding section			
I. Monera			
To what extent does the textbook include discussions about:			
1. The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19)	x		
2. A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	
3. The distinguishing structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x	
	(Standards, Number 2, p. S-4; Statement, Number 3, p. 18) Factual inaccuracies, if any, in the preceding section H. Viruses To what extent does the textbook include discussions about: 1. The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14–15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19) 2. A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12) 3. The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19) 4. Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18) 5. STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measies? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19) Factual inaccuracies, if any, in the preceding section 1. Monera To what extent does the extbook include discussions about: 1. The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19) 2. A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12) 3. The distinguishing structures and their functions?	(Standards, Number 2, p. S-4: Statement, Number 3, p. 18) Factual inaccuracies, if any, in the preceding section H. Viruses To what extent does the textbook include discussions about: 1. The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14–15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19) 2. A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteut? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12) 3. The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19) 4. Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18) 5. STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19) Factual inaccuracies, if any, in the preceding section I. Monera To what extent does the .extbook include discussions about: 1. The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19) 2. A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12) 3. The distinguishing structures and their functions?	(Standards, Number 2, p. S-4: Statement, Number 3, p. 18) Factual inaccuracies, if any, in the preceding section H. Viruses To what extent does the textbook include discussions about: 1. The taxonomy of viruses; e.g., thinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14–15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19) 2. A historical perspective: e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12) 3. The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19) 4. Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18) 5. STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19) Factual inaccuracies, if any, in the preceding section 1. Monera To what extent does the extbook include discussions about: 1. The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19) 2. A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, pp. 8; Standards, p. S-1; Statement, p. 12) 3. The distinguishing structures and their functions?



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I. M	onera—Continued					
4.	Reproduction? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			x		
5.	Diseases caused by monera; e.g., strep throat, urinary tract infections, and STDs? (Science Framework Addendum, p. 27)			x	- 	
6.	Interrelationships with other living things and the environment; e.g., nitrogen fixation and decomposition? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			x		
7.	STIS issues; e.g., food production, waste disposal, pollution, and genetic engineering? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			X		13



J. P	rotists				
	o what extent does the textbook include discussions about:				
· 1.	The evolution, the phylogeny, and taxonomy of protists? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x		
2.	. Protists' structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x			
3.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	x			
4.	Diseases caused by protists; e.g., gingivitis, dysentery, and malaria? (Science Framework Addendum, p. 27; Statement, Number 10, p. 19)		x		
5.	Interrelationships with other living things and the environment; e.g., symbiosis? (Standards, Number 4, p. S-5; Statement, Number 1-), p. 19)			x	
6.	STIS issues; e.g., food sanitation, industrial products, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 10, p. 19)			x	
*******	Factual inaccuracies, if any, in the preceding section				
K. F	ungi				
T	o what extent does the textbook include discussions about:				
1.	The evolution, the phylogeny, and taxonomy of fungi? (Science Framework Addendum, pp. 14–15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x		
2.	A historical perspective; e.g., Fleming? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		X		
3.	The fungal structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x		
4.	Growth and development? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		X		



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
K. F	K. Fungi—Continued					
5	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		x			
6	Diseases caused by fungi; e.g., ringworm, yeast infection, athlete's foot, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5; Statement, Number 10, p. 19)			x		
7	Interrelationships with other living things and the environment; e.g., decomposition, symbiosis (lichen), and mycorrhiza? (Standards, Number 10, p. S-8; Statement, Number 10, p. 19)			x		
8	STIS issues; e.g., food (toxic mushrooms), beverages, antibiotics, and fungicides? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			х		14



	Factual inaccuracies, if any, in the preceding section					
L. P	lants	1			‡ :	•
Te	o what extent does the textbook include discussions about:				!	
1.	The evolution, the phylogeny, and taxonomy of plants? (Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	X	4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1			
2.	Plant structures and their functions; e.g., photosynthesis, food storage, and transport? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9; Statement, Number 10, p. 19)	x				
3.	Adaptations for land existence? (Science Framework Addendum, pp. 18, 22, 24; Statement, p. 16, Number 10, p. 19)		x			
4.	Growth and development, including the role of hormones? (Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		x			
5.	Propagation and reproduction, including role of pollinators? (Science Framework Addendum, p. 25; Statement, Number 5, p. 18)		x			
6.	Response to stimuli? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8)		X			
7.	Health and disease states of plants; e.g., nutrient deficiencies and parasites? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			x		
8.	STIS issues; e.g., horticulture and environmental concerns, timber harvest, defolients, and endangered species? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)			X		
	Factual inaccuracies, if any, in the preceding section		†		The same of the sa	
M. A	nimals	1		•		
T	o what extent does the textbook include discussions about:	1	· · · · · · · · · · · · · · · · · · ·	1		
1.	The taxonomic diversity of animals? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	x		:	:	



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		Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered	
M. A	nim	als—Continued						
2.	Inv	venebrates						
	To	what extent does the textbook include discussions about:						
	a.	Invertebrate structures and their functions; e.g., systems, symmetry? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	x					
	b.	Evolutionary relationships and fossil histories? (Standards, Number 15, p. S-11; Statement, p. 16, and Number 9, p. 19)				X		
	c.	Adaptations; e.g., for feeding and locomotion? (Standards, Number 15 p. S-11)	x					1
ن	d.	Growth, development, and embryology? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	x					14



e	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10; Statement, Number 5, p. 18, and Number 9, p. 19)	x			
f.	Behavior, e.g., innate versus learned, social behaviors, communication, and reproductive behaviors? (Standards, Number 5, p. S-6)			x	
g	Health and diseases; e.g., vectors and parasitism? (Science Framework Addendum, p. 25; Statement, Number 13, p. 20)			x	
h	STIS issues; e.g., agriculture, food, pests, pest control, and aquaculture? (Standards, Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 19)			x	
3. C	hordates (nonhuman)				
T	o what extent does the textbook include discussions about:				
a	Chordate structures and their functions; e.g., comparative anatomy and physiology and classical chordate characteristics? (Science Framework Addendum, pp. 23, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8; Statement, Number 9, p. 19)	x			
b	Evolutionary relationships and fossil histories? (Science Framework Addendum, pp. 15, 18; Statement, p. 16, and Number 9, p. 19)	x			
c	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, p. 30)	x			
d	Growth, development, and embryology? (Science Framework Addendum, p. 31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	x			
e	Reproduction? (Standards, Number 13, p. S-10; Statement, Number 5, p. 18)	x			
f	Behavior; e.g., innate versus learned, social behaviors, or communications? (Standards, Number 5, p. S-6; Statement, Number 9, p. 19)		x		
g	STIS issues; e.g., wildlife management, live animals used in research, veterinary medicine, and endangered species? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 20)			x	



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued					1
4. Vertebrates (Human)			!		1
To what extent does the textbook include discussions about:		: []	:	· !	1 1
a. Structure, function, and maintenance of major body systems:		ļ	:	:	1
(1) Nervous system and sense organs?		x			1
(2) Circulatory system?	to the second of	X			
(3) Digestive system?	<u> </u>	X	ها الما الما الما الما الما الما الما ال	·	
(4) Respiratory system?		X	· ·		
(5) Reproductive system?	m - man	X ,	¥ سسیس مه : :		



	(6) Musculoskeletal system?		X		• •
	(7) Excretory system?		X		
	(8) Integumentary system?		· · ·	x	
	(9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20)		X		
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19)		x		
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37)		х		
d.	Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20)		x		
e.	Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20)			x	
f.	Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12)	x			
g.	Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19)		x		
h.	STIS issues; e.g., substance abuse? (Science Framework Addendum, p. 35)		x		
i.	STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Framework Addendum, pp. 12–13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 13 and Number 16, p. 20)		x		
	Factual inaccuracies, if any, in the preceding section	 	ستوبرنين حمدا دالحم	1	



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II. BIOLOGY: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

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- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.



INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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REVIEW OF PROCESS SKILLS

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis		Limited emphasis	Not covered
1. Observing?	x			{	
2. Communicating?	X				
3. Comparing?	x	1			
4. Organizing?	x	# 12 HOLD 17 HOLD 18 H		; · · · · · · · · · · · · · · · · · ·	
5. Relating?	1		X		
6. Inferring?	1	• · · · · · · · · · · · · · · · · · · ·	X	† — - — — — — — — — — — — — — — — — — —	
7. Applying?	1	1	X		

Science Framework Addendum, p. 5.



^{*}Science Framework Addendum, pp. 4-5.

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III. BIOLOGY: TEACHER'S EDITION

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To w	hat extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)	х			
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	x			
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		x		
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)		x		



5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")				x
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)		x		
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x		
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)		X		
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	x			
0.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)			x	



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IV. BIOLOGY: STUDENT'S LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
A.	To what extent does the student's laboratory manual include:]			
	1. Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	X	!		
** ·	2. Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	X			
,-	3. Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	X			
	4. Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x		



Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		x		
Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			x	
	x			
Communicating?	x			
Comparing?	x			
Organizing?		х		
Relating?		х		
Inferring?		x		
Applying?			X	
	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10) what extent are the following process skills taught throughout the laboratory manual:* Observing? Communicating? Organizing? Relating?	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10) what extent are the following process skills taught throughout the laboratory manual:* Observing?	Science Framework Addendum, p. 104, "Organization of Materials," Number 4) X	Science Framework Addendum, p. 104, "Organization of Materials," Number 4) X

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. BIOLOGY: TEACHER'S EDITION OF THE LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what entire with the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Franework Ander & A. p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)	x			; ; ; ;
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)		X		
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	x			
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	x			



5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)			x	
6.	Resource lists for acquiring:				
	a. Equipment?	X			
	b. Chemicals?	x		-	
	c. Supplies?	x			
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	х			
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)	x			
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)		x		
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)		X		
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)		X		



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I. BIOLOGY: CONTENT (STUDENT'S EDITION)

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
A.	What is biology?					
	To what extent does the textbook include discussions about:		1		i !	1
	1. The distinguishing characteristics of life; e.g., reproduction and growth? (Science Framework Addendum, p. 14)			X	! !	
****	2. Scientific reasoning; e.g., induction, deduction, observation, fact, hypothesis, theory, and inference? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1; Statement,† p. 9)	x				
	3. Research methods and tools of biologists; e.g., microscopes, centrifuge, and metric measurement? (Science Framework Addendum, pp. 23, 26, 27)	x	;			
all the	4. Science, Technology, Individuals, and Society (STIS) issues; e.g., health, ethical concerns, careers, and economic impact? (Science Framework Addendum, p. 13; Statement, Number 13 and Number 16, p. 20)		-	X		

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_	Factual inaccuracies, if any, in the preceding section [‡]					
В.	Ecology					
	To what extent does the textbook include discussions about:					
	1. Diversity and stability in ecosystems? (Science Framework Addendum, pp. 41-42)		x			,
	 Biotic and abic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18) 		x			
	3. Levels of ecological organization; e.g., communities, biomes, and populations? (Science Framework Addendum, pp. 39, 42; Standards, Number 4, p. S-5, and Number 16, p. S-11; Statement, Number 11, p. 19)		x			
	4. The energy flow through the ecosystem; e.g., trophic levels and energy pyramids? (Science Framework Addendum, p. 40; Statement, Number 4, p. 18, and Number 11, p. 19)			x		
	5. The impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18, and Number 11, p. 20)			x		
-	Factual inaccuracies, if any, in the preceding section		'			
c.	Heredity		!			
	To what extent does the textbook include discussions about:			į	!	; !
	 A historical perspective; e.g., Mendel, Morgan, Sutton, Watson, and Crick? (Science Framework Addendum, p. 8; Standards, Number 12, p. S-9, and Number 14, p. S-10; Statement, p. 12) 	x		; ; ;		
	. I the state of the		1	1	•	1

NOTE: The secondary biology textbook review instrument is correlated with the following resource documents:

^{*}See "Factual Inaccuracies" on page xii.



[.] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum,

^{. *}Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

[•] The Statement on Preparation in Natural Science Expected of Entering Freshmen is cited as Statement.

The first two documents are published by the California State Department of Education. The last one listed was issued by the Academic Senates of the California Community Colleges, the California State University, and the University of California in cooperation with the California Round Table on Educational Opportunity. Each publication is available from the California State Department of Education (see pages 403 and 404 for ordering information).

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
C. He	eredity—Continued					
2.	Scientific tools to model heredity; e.g., probability, statistics, and pedigrees? (Science Framework Addendum, p. 20; Standards, Number 14, p. S-10)			x		
3.	Cell cycle, meiosis, and mitosis? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 5, p. 18)		x			
4.	Chromosomes, genes, DNA, and RNA? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)	x				
5.	Biochemical aspects of heredity; e.g., transcription, translation, and protein synthesis? (Science Framework Addendum, p. 19; Statement, Number 7, p+18)		x			



6.	Gene and chromosome mutations; e.g., inversions, insentions, and nonsense codons? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)	х			
7.	Human genetic variability; e.g., color blindness, baldness, and blood groups? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10; Statement, Number 7, p. 18)		x		
8.	The influence of heredity on health and disease; e.g., sickle-cell anemia, hemophilia, and Down's syndrome? (Standards, Number 12, p. S-9; Statement, Number 13, p. 20)		x		1
9.	STIS issues; e.g., selective breeding and techniques and ethics of genetic engineering? (Science Framework Addendum, pp. 19–20; Statement, Number 5, p. 18, and Number 13, p. 20)	x			
~	Factual inaccuracies, if any, in the preceding section				
). E	volution				
To	o what extent does the textbook include discussions about:	•			
1.	The genetic basis of evolution; e.g., genes as the source of variation? (Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	x		:	1
2.	A historical perspective; e.g., works of Lamarck, V.'allace, and Darwin? (Science Framework Addendum, p. 8; Standards, p. S-1, and Number 15, p. S-11; Statement, p. 12, and Number 6, p. 18)		X		
3.	Scientific evidence; e.g., paleontology, genetics, biochemistry, and comparative anatomy? (Science Framework Addendum, pp. 20, 31; Statement, Number 6, p. 18)	x			!
4.	Fossil evidence for evolution; e.g., skeletons, pollen, dating methods, and sequence of fossil forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)		x	1	
5.	Evolutionary processes and their effects; e.g., selection, drift, adaptation, speciation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)	x		•	



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
). Ev	volution—Continued					
6.	Scientific theories about the origin of life; e.g., inorganic to organic? (Science Framework Addendum, p. 24; Statement, Number 6, p. 18)		X			
7.	The history of life on earth; e.g., evolution from unicellular to multicellular and more specialized forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	x				
8.	Human evolution; e.g., paleoanthropology and the work on "Lucy"? (Science Framework Addendum, p. 35; Statement, Number 6, p. 18)		x			A 1
	Factual inaccuracies, if any, in the preceding section		<u> </u>			1



E.	Cla	assification					
	To	what extent does the textbook include discussions about:					
	1.	A historical perspective; e.g., Aristotle and Linnaeus? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x		
	2.	Evolutionary relationships as the basis of classification? (Science Framework Addendum, pp. 20, 31; Statement, Number 8, p. 19)	х				
	3.	Principles of classification; e.g., hierarchy and binomial nomenclature? (Standards, Number 3, p. S-5; Statement, Number 8, p. 19)		x			
	4,	Comparative anatomy, genetic structure (phenotypes), and biochemistry as data sets for classification? (Science Framework Addendum, p. 20; Statement, Number 8, p. 19)		x			
		Factual inaccuracies, if any, in the preceding section		^			
F.		nemistry what extent does the textbook include discussions about:					
	1.	Atoms, molecules, chemical bonds, reactions, and the periodic table? (Science Framework Adder um, p. 24; Statement, Number 2, p. 17)		x			
	2.	The structure and function of molecules in living things; e.g., proteins, nucleic acids, lipids, and polysaccarides? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 2, p. 17)		x			
	3.	Energy processes; e.g., laws of thermodynamics, diffusion, osmosis, and enzyme kinetics? (Science Framework Addendum, p. 19)		. X			
		Factual inaccuracies, if any, in the preceding section		t			
G.	Ce	lls				1	Andrew characters and the second
	То	what extent does the textbook include discussions about:					
	1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x		



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G. C	ells—Continued					
2.	The structure and function of cells and cell components, including the similarities and differences between plant and animal cells? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 1, p. 17)		x			
3.	Cellular homeostasis? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)		x			
4.	Cellular respiration? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)		X	A44-		
5.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9; Statement, Number 14, p. 18)		X			



ĸ	Levels of organization, cells to systems? (Standards, Number 2, p. S-4; Statement, Number 3, p. 18)	x			
	Factual inaccuracies, if any, in the preceding section				
H. V	'iruses		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
T	o what extent does the textbook include discussions about:				
1.	The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)			x	
2.	. A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			х	
3	. The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x		
4.	. Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18)		х		
5.	. STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			x	
	Factual inaccuracies, if any, in the preceding section				
I. M	1onera			1	
T	o what extent does the textbook include discussions about:	•	1	! !	
1.	. The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19)		x		
2.	. A historical perspective; e.g., Pasteu: or Koch: (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x	
3.	. The distinguishing structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x		



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M	onera—Continued		!			
4.	Reproduction? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	;			X	1
5.	Diseases caused by monera; e.g., strep throat, urinary tract infections, and STDs? (Science Framework Addendum, p. 27)			X		
6.	Interrelationships with other living things and the environment; e.g., nitrogen fixation and decomposition? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)		**************************************	X		!
7.	STIS issues; e.g., food production, waste disposal, pollution, and genetic engineering? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)		,		X	



J.	Protists			
	To what extent does the textbook include discussions about:	•		
	1. The evolution, the phylogeny, and taxonomy of protists? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x		
	2. Protists' structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x		
	3. Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		x	
	4. Diseases caused by protists; e.g., gingivitis, dysentery, and malaria? (Science Framework Addendum, p. 27; Statement, Number 10, p. 19)		x	
	5. Interrelationships with other living things and the environment; e.g., symbiosis? (Standards, Number 4, p. S-5; Statement, Number 10, p. 19)		х	•
	6. STIS issues; e.g., food sanitation, industrial products, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 10, p. 19)		x	
_	Factual inaccuracies, if any, in the preceding section			
K.	Fungi			
	To what extent does the textbook include discussions about:			
	 The evolution, the phylogeny, and taxonomy of fungi? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19) 		x	
	2. A historical perspective; e.g., Fleming? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	
	3. The fungal structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x	
	4. Growth and development? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		x	



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. Fu	ngi—Continued					
5.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			x		
6.	Diseases caused by fungi; e.g., ringworm, yeast infection, athlete's foot, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5; Statement, Number 10, p. 19)				X	
7.	Interrelationships with other living things and the environment; e.g., decomposition, symbiosis (lichen), and mycorrhiza: (Standards, Number 10, p. S-8; Statement, Number 10, p. 19)		† · · · · · · · · · · · · · · · · · · ·	x		
8.	STIS issues; e.g., food (toxic mushrooms), beverages, antibiotics, and fungicides? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)				X	1



-	Factual inaccuracies, if any, in the preceding section				
L. Pl	lants				1
To	o what extent does the textbook include discussions about:				
1.	The evolution, the phylogeny, and taxonomy of plants? (Standards, Number 3, p. S-5; Statement, Number 10, p. 19)			x	
2.	Plant structures and their functions; e.g., photosynthesis, food storage, and transport? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9; Statement, Number 10, p. 19)		x		
3.	Adaptations for land existence? (Science Framework Addendum, pp. 18, 22, 24; Statement, p. 16, Number 10, p. 19)			x	
4.	Growth and development, including the role of hormones? (Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		x		
5.	Propagation and reproduction, including role of pollinators? (Science Framework Addendum, p. 25; Statement, Number 5, p. 18)		x		
6.	Response to stimuli? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8)			X	
7.	Health and disease states of plants; e.g., nutrient deficiencies and parasites? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			X	
8.	STIS issues; e.g., horticulture and environmental concerns, timber harvest, defolients, and endangered species? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)		x	1 · · · · · · · · · · · · · · · · · · ·	
	Factual inaccuracies, if any, in the preceding section	#11.2	†		** * * * * * * * * * * * * * * * * * *
M. Ar	nimals	-	:	· :	
To	what extent does the textbook include discussions about:		1		
1.	The taxonomic diversity of animals? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	x	1		· ·



Total Section Section

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	Content	High emphasis	Substantial eniphasis	Moderate emphasis	Limited emphasis	Not covered
M. A	nimals—Continued					
2.	Invertebrates				, ,	
	To what extent does the textbook include discussions about:					
	a. Invertebrate structures and their functions; e.g., systems, symmetry? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	x				
, ., to TA the	b. Evolutionary relationships and fossil histories? (Standards, Number 15, p. S-11; Statement, p. 16, and Number 9, p. 19)	x				
	c. Adaptations: e.g., for feeding and locomotion? (Standards, Number 15, p. S-11)	x				19
	d. Growth, development, and embryology? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		x			



е	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10; Statement, Number 5, p. 18, and Number 9, p. 19)	x				
f.	Behavior, e.g., innate versus learned, social behaviors, communication, and reproductive behaviors? (Standards, Number 5, p. S-6)			x		
g	Health and diseases; e.g., vectors and parasitism? (Science Framework Addendum, p. 25; Statement, Number 13, p. 20)			x		
h	STIS issues; e.g., agriculture, food, pests, pest control, and aquaculture? (Standards, Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 19)			x		
3. C	hordates (nonhuman)					
T	o what extent does the textbook include discussions about:					
a	Chordate structures and their functions; e.g., comparative anatomy and physiology and classical chordate characteristics? (Science Framework Addendum, pp. 28, 30: Standards, Number 7, p. S-7, and Number 9, p. S-8; Statement, Number 9, p. 19)	x				
b	Evolutionary relationships and fossil histories? (Science Framework Addendum, pp. 15, 18; Statement, p. 16, and Number 9, p. 19)		х			
С	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, p. 30)	x				
d	Growth, development, and embryology? (Science Framework Addendum, p. 31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	x				
e	Reproduction? (Standards, Number 13, p. S-10; Statement, Number 5, p. 18)	x			···	
f.	Behavior, e.g., innate versus learned, social behaviors, or communications? (Standards, Number 5, p. S-6; Statement, Number 9, p. 19)			x		
g	STIS issues; e.g., wildlife management, live animals used in research, veterinary medicine, and endangered species? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 20)			x		



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Anima	als—Continued			• • • • • • • • • • • • • • • • • • •		
4. Ve	ertebrates (Human)		1	,		
To w	what extent does the textbook include discussions about:		!	1	<u>:</u>	
ä	a. Structure, function, and maintenance of major body systems:		İ			
	(1) Nervous system and sense organs?		X	; 		1
	(2) Circulatory system?		X			
	(3) Digestive system?		X			
97	(4) Respiratory system?			X		19
	(5) Reproductive system?		X			



	(6) Musculoskeletal system?		X		
	(7) Excretory system?		X		
	(8) Integumentary system?		X		
	(9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20)	x			
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19)		х		
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37)		x		
d:	Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20)		x		
e.	Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34–35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20)			x	
f.	Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12)	X			
g.	Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19)	x	1		+ ·
h.	STIS issues; e.g., substance abuse? (Science Framework Addendum, p. 35)		x	:	
i.	STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Framework Addendum, pp. 12–13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 13 and Number 16, p. 20)		x		
	factual inaccuracies, if any, in the preceding section		.	•	•
	199	~			20



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II. BIOLOGY: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- · Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.





INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- · Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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To what extent are the following process skills taught throughout the textbook: 1. Observing? 2. Communicating? 3. Comparing? 4. Organizing? 5. Relating?					
To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis		Not covered
1. Observing?	x				, ,
2. Communicating?	X	magner ver i be a militar			
3. Comparing?	X				1
4. Organizing?	1	X			
5. Relating?		X		i	1
6. Inferring?		X	,		
7. Applying?		***	X		!

Science Framework Addendum, p. 5.



^{*}Science Framework Addendum, pp. 4-5.

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III. BIOLOGY: TEACHER'S EDITION

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To w	what extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)	x			
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)		X	-	
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			X	
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)		x		



5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")			x
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)		x	
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x	
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)			x
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)			x
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)	x		



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IV. BIOLOGY: STUDENT'S LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
A. T	o what extent does the student's laboratory manual include:				
1.	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	х			
3.	. Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	x			
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x		



5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		X		
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)		x		
. То	what extent are the following process skills taught throughout the laboratory manual:*				
1.	Observing?	X			
2.	Communicating?	X			
3.	Comparing?	х			
4.	Organizing?		Х		-
5.	Relating?		X		
6.	Inferring?			X	
7.	Applying?				X

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. BIOLOGY: TEACHER'S EDITION OF THE LABORATORY MANUAL

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To v	what extent does the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)		x		
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)			x	
3.	Material which guides students to use high r-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			x	
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x		



5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)	x	the same of the sa	
6.	Resource lists for acquiring:			
	a. Equipment?	X		
	b. Chemicals?	x		
	c. Supplies?	x		
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	х		
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)	х		
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)		x	
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)	х		
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)	х		
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I. BIOLOGY: CONTENT (STUDENT'S EDITION)

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		Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
A.	W	hat is biology?			· · · · · · · · · · · · · · · · · · ·		
	To	what extent does the textbook include discussions about:					
·	1.	The distinguishing characteristics of life; e.g., reproduction and growth? (Science Framework Addendum, p. 14)				X	
	2.	Scientific reasoning; e.g., induction, deduction, observation, fact, hypothesis, theory, and inference? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1; Statement,* p. 9)			X		
301	3.	Research methods and tools of biologists; e.g., microscopes, centrifuge, and metric measurement? (Science Framework Addendum, pp. 23, 26, 27)			x	• • • • • • • • • • • • • • • • • • • •	
7	4.	Science, Technology, Individuals, and Society (STIS) issues; e.g., health, ethical concerns, careers, and economic impact? (Science Framework Addendum, p. 13; Statement, Number 13 and Number 16, p. 20)	x				2



		Factual inaccuracies, if any, in the preceding section [‡]		1			
B.	Ec	ology					***
	To	what extent does the textbook include discussions about:					
	1.	Diversity and stability in ecosystems? (Science Framework Addendum, pp. 41-42)	X				
	2.	Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18)	x				
	3.	Levels of ecological organization; e.g., communities, biomes, and populations? (Science Framework Addendum, pp. 39, 42; Standards, Number 4, p. S-5, and Number 16, p. S-11; Statement, Number 11, p. 19)	x				
	4.	The energy flow through the ecosystem; e.g., trophic levels and energy pyramids? (Science Framework Addendum, p. 40; Statement, Number 4, p. 18, and Number 11, p. 19)		х			
	5.	The impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18, and Number 11, p. 20)	x				
		Factual inaccuracies, if any, in the preceding section				!	
C .	He	eredity	1 : :	:		:	
**		what extent does the textbook include discussions about:		1	:		1
		A historical perspective; e.g., Mendel, Morgan, Sutton, Watson, and Crick? (Science Framework Addendum, p. 8; Standards, Number 12, p. S-9, and Number 14, p. S-10; Statement, p. 12)	1		x		; ;

NOTE: The secondary biology textbook review instrument is correlated with the following resource documents:

^{&#}x27;See "Factual Inaccuracies" on page xii.



[•] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{• *}Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

The Statement on Preparation in Natural Science Expected of Entering Freshmen is cited as Statement.

The first two documents are published by the California State Department of Education. The last one listed was issued by the Academic Senates of the California Community Colleges, the California State University, and the University of California in cooperation with the California Round Table on Educational Opportunity. Each publication is available from the California State Department of Education (see pages 403 and 404 for ordering information).

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NOT COVERED means that information about the topic is not present.

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С. Н	eredity—Continued					
2.	Scientific tools to model heredity; e.g., probability, statistics, and pedigrees? (Science Framework Addendum, p. 20; Standards, Number 14, p. S-10)			x		
3.	Cell cycle, meiosis, and mitosis? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 5, p. 18)			х		
4.	Chromosomes, genes, DNA, and RNA? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)			х		
5.	Biochemical aspects of heredity; e.g., transcription, translation, and protein synthesis? (Science Framework Addendum, p. 19; Statement, Number 7, p. 18)				x	2



6.	Gene and chromosome mutations; e.g., inversions, insertions, and nonsense codons? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)			x	
7.	Human genetic variability; e.g., color blindness, baldness, and blood groups? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10; Statement, Number 7, p. 18)			x	
8.	The influence of heredity on health and disease; e.g., sickle-cell anemia, hemophilia, and Down's syndrome? (Standards, Number 12, p. S-9; Statement, Number 13, p. 20)			x	
9.	STIS issues; e.g., selective breeding and techniques and ethics of genetic engineering? (Science Framework Addendum, pp. 19–20; Statement, Number 5, p. 18, and Number 13, p. 20)			x	
	Factual inaccuracies, if any, in the preceding section			_	
). E	volution	; ; ;			
To	what extent does the textbook include discussions about:	• • •		!	
1.	The genetic basis of evolution; e.g., genes as the source of variation? (Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	!	x		
2.	A historical perspective; e.g., works of Lamarck, Wallace, and Darwin? (Science Framework Addendum, p. 8; Standards, p. S-1, and Number 15, p. S-11; Statement, p. 12, and Number 6, p. 18)		x		
3.	Scientific evidence; e.g., paleontology, genetics, biochemistry, and comparative anatomy? (Science Framework Addendum, pp. 20, 31; Statement, Number 6, p. 18)	!	x	<u> </u>	
4.	Fossil evidence for evolution; e.g., skeletons, policn, dating methods, and sequence of fossil forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	· · · · · · · · · · · · · · · · · · ·	x		
5.	Evolutionary processes and their effects; e.g., selection, drift, adaptation, speciation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)	x			



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Consens	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
D. Evolution—Continued					
6. Scientific theories about the origin of life; e.g., inorganic to organic? (Science Framework Addendum, p. 24; Statement, Number 6, p. 18)			x		
7. The history of life on earth; e.g., evolution from unicellular to multicellular and more specialized forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)		х			
8. Human evolution; e.g., palcoanthropology and the work on "Lucy"? (Science Framework Addendum, p. 35; Statement, Number 6, p. 18)		x			
Factual inaccuracies, if any, in the preceding section		<u> </u>	ئیں دیں۔۔۔۔۔ یہ حدید	<u> </u>	2



E.	Cla	assification				
	To	what extent does the textbook include discussions about:				
	1.	A historical perspective; e.g., Aristotle and Linnaeus? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x	
	2.	Evolutionary relationships as the basis of classification? (Science Framework Addendum, pp. 20, 31; Statement, Number 8, p. 19)		x		
	3.	Principles of classification; e.g., hierarchy and binomial nomenclature? (Standards, Number 3, p. S-5; Statement, Number 8, p. 19)	x			
	4.	Comparative anatomy, genetic structure (phenotypes), and biochemistry as data sets for classification? (Science Framework Addendum, p. 20; Statement, Number 8, p. 19)		x		
		Factual inaccuracies, if any, in the preceding section				
F.		nemistry				
	10	what extent does the textbook include discussions about:				
	1.	Atoms, molecules, chemical bonds, reactions, and the periodic table? (Science Framework Addendum, p. 24; Statement, Number 2, p. 17)			x	
	2.	The structure and function of molecules in living things; e.g., proteins, nucleic acids, lipids, and polysaccarides? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 2, p. 17)		x		
	3.	Energy processes; e.g., laws of thermodynamics, diffusion, osmosis, and enzyme kinetics? (Science Framework Addendum, p. 19)		x		
_		Factual inaccuracies, if any, in the preceding section				
G.	Ce	lls				
	То	what extent does the textbook include discussions about:				
	1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x	



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	Content	High emphasis	Substantial emphasis	Moderale emphasis	Limited emphasis	Not covered
G. (Cells—Continued					
2	The structure and function of cells and cell components, including the similarities and differences between plant and animal cells? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 1, p. 17)			X		
3	Cellular homeostasis? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)				x	· · · · · · · · · · · · · · · · · · ·
4	Cellular respiration? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)		X			
5	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9; Statement, Number 14, p. 18)		x			



6	5. Levels of organization, cells to systems? (Standards, Number 2, p. S-4; Statement, Number 3, p. 18)	x		
	Factual inaccuracies, if any, in the preceding section			-
I. V	Viruses			
T	To what extent does the textbook include discussions about:			
1	1. The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	x		
2	2. A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	
3	3. The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	x		
4	Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18)		х	
5	5. STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)		x	
	Factual inaccuracies, if any, in the preceding section			
. N	Monera			
T	To what extent does the textbook include discussions about:			1
1.	. The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19)	x		
2.	A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	
3.	The distinguishing structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x	



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I. N	Ionera—Continued					
4	. Reproduction? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)				x	
5	Diseases caused by monera; e.g., strep throat, urinary tract infections, and STDs? (Science Framework Addendum, p. 27)				x	
6	Interrelationships with other living things and the environment; e.g., nitrogen fixation and decomposition? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)		x			
7	STIS issues; e.g., food production, waste disposal, pollution, and genetic engineering? (Science Framework Addendum, p. 27; Standards. Number 17, p. S-12; Statement, Number 10, p. 19)			х		6
	Factual inaccuracies, if any, in the preceding section					1



J. 1	Protists				1
7	To what extent does the textbook include discussions abov'.				
]	1. The evolution, the phylogeny, and taxonomy of protists? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x			
2	2. Protists' structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x		
3	3. Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	x			
4	Diseases caused by protists; e.g., gingivitis, dysentery, and malaria? (Science Framework Addendum, p. 27; Statement, Number 10, p. 19)		4	x	
5	5. Interrelationships with other living things and the environment; e.g., symbiosis? (Standards, Number 4, p. S-5; Statement, Number 10, p. 19)			x	
6	STIS issues; e.g., food sanitation, industrial products, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 10, p. 19)			x	
	Factual inaccuracies, if any, in the preceding section				
K. I	² ungi			1	
7	To what extent does the textbook include discussions about:				1
1	. The evolution, the phylogeny, and taxonomy of fungi? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		X		
2	. A historical perspective; e.g., Fleming? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		,		X
3	The fungal structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)			x	!
4	. Growth and development? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			X	



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K. Fu	ngi—Continued					
5.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			x		
6.	Diseases caused by fungi; e.g., ringworm, yeast infection, athlete's foot, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5; Statement, Number 10, p. 19)				x	
7.	Interrelationships with other living things and the environment; e.g., decomposition, symbiosis (lichen), and mycorrhiza? (Standards, Number 10, p. S-8; Statement, Number 10, p. 19)			x		
8.	STIS issues; e.g., food (toxic mushrooms), beverages, antibiotics, and fungicides? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12; Statemen:, Number 10, p. 19)			x		



		Factual inaccuracies, if any, in the preceding section					
L.	Pla	ants					
	To	what extent does the textbook include discussions about:					1
	1.	The evolution, the phylogeny, and taxonomy of plants? (Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x			
	2.	Plant structures and their functions; e.g., photosynthesis, food storage, and transport? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9; Statement, Number 10, p. 19)		x			
	3.	Adaptations for land existence? (Science Framework Addendum, pp. 18, 22, 24; Statement, p. 16, Number 10, p. 19)			x		
	4.	Growth and development, including the role of hormones? (Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		х			
	5.	Propagation and reproduction, including role of polunators? (Science Framework Addendum, p. 25; Statement, Number 5, p. 18)		x			
	6.	Response to stimuli? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8)			х		
	7.	Health and disease states of plants; e.g., nutrient deficiencies and parasites? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			x		
	8.	STIS issues; e.g., horticulture and environmental concerns, timber harvest, defolients, and endangered species? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)	x				
		Factual inaccuracies, if any, in the preceding section		1			
M.	An	nimals		· !	; ; ;		
	То	what extent does the textbook include discussions about:		1		, , ,	
	1.	The taxonomic diversity of animals? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)			x		



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M. Aı	nima	als—Continued					
2.	Inv	vertebrates					
	To	what extent does the textbook include discussions about:					
_	a.	Invertebrate structures and their functions; e.g., systems, symmetry? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)			x		
	b.	Evolutionary relationships and fossil histories? (Standards, Number 15, p. S-11; Statement, p. 16, and Number 9, p. 19)				x	
	c.	Adaptations; e.g., for feeding and locomotion? (Standards, Number 15, p. S-11)				x	
**-	d.	Growth, development, and embryology? (Science Framework Addendum, pp. 30–31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)					X



			·
e	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10; Statement, Number 5, p. 18, and Number 9, p. 19)	x	
f.	Behavior; e.g., innate versus learned, social behaviors, communication, and reproductive behaviors? (Standards, Number 5, p. S-6)	x	
g 	Health and diseases; e.g., vectors and parasitism? (Science Framework Addendum, p. 25; Statement, Number 13, p. 20)	x	
h	STIS issu2s; e.g., agriculture, food, pests, pest control, and aquaculture? (Standards, Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 19)	x	
3. C	hordates (nonhuman)		
T	o what extent does the textbook include discussions about:		
a.	Chordate structures and their functions; e.g., comparative anatomy and physiology and classical chordate characteristics? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8; Statement, Number 9, p. 19)	x	
b	Evolutionary relationships and fossil histories? (Science Framework Addendum, pp. 15, 18; Statement, p. 16, and Number 9, p. 19)		x
C.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, p. 30)		x
d.	Growth, development, and embryology? (Science Framework Addendum, p. 31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	X	
e.	Reproduction? (Standards, Number 13, p. S-10; Statement, Number 5, p. 18)		x
f.	Behavior; e.g., innate versus learned, social behaviors, or communications? (Standards, Number 5, p. S-6; Statement, Number 9, p. 19)	x	
g.	STIS issues; e.g., wildlife management, live animals used in research, veterinary medicine, and endangered species? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 20)		



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A. Animals—	-Continued					
4. Vertebr	rates (Human)					
To what o	extent does the textbook include discussions about:		!			1
a. Str	ucture, function, and maintenance of major body systems:					; 1
(1)	Nervous system and sense organs?	1	x			
(2)	Circulatory system?		X		<u> </u>	
(3)	Digestive system?		X			
(4)	Respiratory system?			X	ستاليدر ومني ساد داد	
(5)	Reproductive system?		X		* * ** ********************************	6



	(6) Musculoskeletal system?			X		
	(7) Excretory system?			X		
	(8) Integumentary system?			-	-	
	(9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20)			x		
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19)		x			
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37)				x	
d.	Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20)			x		
e.	Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20)			X		
f.	Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12)	X				
g.	Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19)	x				
h.	STIS issues; e.g., substance abuse? (Science Framework Addendum, p. 35)	j		x		
i.	STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Framework Addendum, pp. 12–13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 13 and Number 16, p. 20)	x				
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II. BIOLOGY: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.



INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

DEFINITION OF TERMS

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REVIEW OF PROCESS SKILLS

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	x				
2. Communicating?	х				
3. Comparing?	х				
4. Organizing?	X		-,4-7		!
5. Relating?	х				
6. Inferring?	X	,			
7. Applying?			X		

Science Framework Addendum, p. 5.

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^{*}Science Framework Addendum, pp. 4-5.

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III. BIOLOGY: TEACHER'S EDITION

DEFINITION OF TERMS

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covere
'o w	hat extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)			x	
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	x			
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	x			
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)	x			



5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")			x	
б.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)		x		
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	x			
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)		x		
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	x			
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)		x		



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IV. BIOLOGY: STUDENT'S LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
A. To	what extent does the student's laboratory manual include:				
1.	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	X			
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	X			
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	X			



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5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	x		
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)		x	
). To	what extent are the following process skills taught throughout the laboratory manual:*			
1.	Observing?	x		
2.	Communicating?	х		
3.	Comparing?	х		
4.	Organizing?	x		
5.	Relating?	х		
6.	Inferring?	х		
7.	Applying?		X	

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. BIOLOGY: TEACHER'S EDITION OF THE LABORATORY MANUAL

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-	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covere
ľε»,	does the teacher's edition of the laboratory manual include:				
1.	Infine lation that encourages the shared responsibility for safety in the science laboratory? (Science Framework - idendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)	x			Topics Topics
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	x	,		
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	x			



5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)	ي شد	x		
6.	Resource lists for acquiring:				
	a. Equipment?	x			American control of the control of t
	b. Chemicals?	х			
	c. Supplies?	x			
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	x			
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104–105, "Teachers' Materials," Number 2)	x			
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)	x			
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)	x			
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)			x	



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I. BIOLOGY: CONTENT (STUDENT'S EDITION)

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		Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
A.	W	hat is biology?					
	То	what extent does the textbook include discussions about:					
	1.	The distinguishing characteristics of life; e.g., reproduction and growth? (Science Framework Addendum, p. 14)	· · · · · · · · · · · · · · · · · · ·	x			1 1 1 1 2
	2.	Scientific reasoning; e.g., induction, deduction, observation, fact, hypothesis, theory, and inference? (Science Framework Addendum, pp. 8, 12; St. ndards, p. S-1; Statement, p. 9)			X		
	3.	Research methods and tools of biologists; e.g., microscopes, centrifuge, and metric measurement? (Science Framework Addendum, pp. 23, 26, 27)	x				
)	4.	Science, Technology, Individuals, and Society (STIS) issues; e.g., health, ethical concerns, careers, and economic impact? (Science Framework Addendum, p. 13; Statement, Number 13 and Number 16, p. 20)	x				· ·· - · · ,



		Factual inaccuracies, if any, in the preceding section [‡]				
B.	Ec	cology				
	To	what extent does the textbook include discussions about:				
	1.	Diversity and stability in ecosystems? (Science Framework Addendum, pp. 41-42)		x		
	2.	B: and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18)		x		
	3.	Levels of ecological organization; e.g., communities, biomes, and populations? (Science Framework Addendum, pp. 39, 42; Standards, Number 4, p. S-5, and Number 16, p. S-11; Statement, Number 11, p. 19)	x			
<u>.</u>	4.	The energy flow through the ecosystem; e.g., trophic levels and energy pyramids? (Science Framework Addendum, p. 40; Statement, Number 4, p. 18, and Number 11, p. 19)			x	
	5.	The impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18, and Number 11, p. 20)	x			
_		Factual inaccuracies, if any, in the preceding section				
<u>с.</u>	He	eredity			!	
		what extent does the textbook include discussions about:		1	1	3
		A historical perspective; e.g., Mendel, Morgan, Sutton, Watson, and Crick? (Science Framework Addendum, p. 8; Standards, Number 12, p. S-9, and Number 14, p. S-10; Statement, p. 12)		*	x	1

NOTE: The secondary biology textbook review instrument is correlated with the following resource documents:

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. 1 .

[.] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{. *}Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

^{• &#}x27;The Statement on Preparation in Natural Science Expected of Entering Freshmen is cited as Statement.

The first two documents are published by the California State Department of Education. The last one listed was issued by the Academic Senates of the California Community Colleges, the California State University, and the University of California in cooperation with the California Round Table on Educational Opportunity. Each publication is available from the California State Department of Education (see pages 403 and 404 for ordering information).

^{&#}x27;See "Factual Inaccuracies" on page xii.

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
. н	eredity—Continued					
2.	Scientific tools to model heredity; e.g., probability, statistics, and pedigrees? (Science Framework Addendum, p. 20; Standards, Number 14, p. S-10)		x			
3.	Cell cycle, meiosis, and mitosis? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 5, p. 18)		x			
4.	Chromosomes, genes, DNA, and RNA? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)	х				
5.	Biochemical aspects of heredity; e.g., transcription, translation, and protein synthesis? (Science Framework Addendum, p. 19; Statement, Number 7, p. 18)			x		



6.	Gene and chromosome mutations; e.g., inversions, insertions, and nonsense codons? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)		x		
7.	Human genetic variability; e.g., color blindness, baldness, and blood groups? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10; Statement, Number 7, p. 18)			x	
8.	The influence of heredity on health and disease; e.g., sickle-cell anemia, hemophilia, and Down's syndrome? (Standards, Number 12, p. S-9; Statement, Number 13, p. 20)		x		
9.	STIS issues; e.g., selective breeding and techniques and ethics of genetic engineering? (Science Framework Addendum, pp. 19–20; Statement, Number 5, p. 18, and Number 13, p. 20)		x		
	Factual inaccuracies, if any, in the preceding section				
E	volution			7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	
To	what extent does the textbook include discussions about:				
1.	The genetic basis of evolution; e.g., genes as the source of variation? (Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	1	; ; ; ;	x	
2.	A historical perspective; e.g., works of Lamarck, Wallace, and Darwin? (Science Framework Addendum, p. 8; Standards, p. S-1, and Number 15, p. S-11; Statement, p. 12, and Number 6, p. 18)		x		
3.	Scientific evidence; e.g., paleontology, genetics, biochemistry, and comparative anatomy? (Science Framework Addendum, pp. 20, 31; Statement, Number 6, p. 18)	X	†	4	
4.	Fossil evidence for evolution; e.g., skeletons, pollen, dating methods, and sequence of fossil forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	x			-
	Evolutionary processes and their effects; e.g., selection, drift, adaptation, speciation, and	 	 	1	



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D.	Evolution—Continued					
	6. Scientific theories about the origin of life; e.g., inorganic to organic? (Science Framework Addendum, p. 24; Statement, Number 6, p. 18)			x		
	7. The history of life on earth; e.g., evolution from unicellular to multicellular and more specialized forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)			x		
	8. Human evolution; e.g., palcoanthropology and the work on "Lucy"? (Science Framework Addendum, p. 35; Statement, Number 6, p. 18)			X		
<u></u>	Factual inaccuracies, if any, in the preceding section					274



E.	Classification					
	To what extent does the textbook	nclude discussions about:				
	1. A historical perspective; e.g.,	Aristotle and Linnaeus?				
	(Science Framework Addendu	m, p. 8; Standards, p. S-1; Statement, p. 12)		X		
	2. Evolutionary relationships as (Science Framework Addendu	he basis of classification? m, pp. 20, 31; Statement, Number 8, p. 19)			х	
	3. Principles of classification; e.g (Standards, Number 3, p. S-5;	Statement, Number 8, p. 19)		х		
	4. Comparative anatomy, genetic	structure (phenotypes), and biochemistry as data sets for				
	classification? (Science Framework Addendu	m, p. 20; Statement, Number 8, p. 19)		x		
	Factual inaccuracies, if any, ir	the preceding section				
F.	Chemistry					
	To what extent does the textbook	nclude discussions about:				
		onds, reactions, and the periodic table? m, p. 24; Statement, Number 2, p. 17)	x			
		nolecules in living things; e.g., proteins, nucleic acids,				
	lipids, and polysaccarides?	m n 10. Can Jan Jan Jan Normbon 1 n C 4. Canana				
	Number 2, p. 17)	n, p. 19; Standards, Number 1, p. S-4; Statement,	x			
	3. Energy processes; e.g., laws o (Science Framework Addendu	thermodynamics, diffusion, osmosis, and enzyme kinetics? n, p. 19)	x			
	Factual inaccuracies, if any, ir	the preceding section	1			
G.	. Cells		, 1			
	To what extent does the textbook	nclude discussions about:				
		Hook, Schleiden, Schwann, and Virchow? m, p. 8; Standards, p. S-1; Statement, p. 12)		x		



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G. C	ells—Continued					
2.	The structure and function of cells and cell components, including the similarities and differences between plant and animal cells? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 1, p. 17)	x				
3.	Cellular homeostasis? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)			x		
4.	Cellular respiration? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)	x	I			
5.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9; Statement, Number 14, p. 18)	x				2



	6.	Levels of organization, cells to systems? (Standards, Number 2, p. S-4; Statement, Number 3, p. 18)		x	
_		Factual inaccuracies, if any, in the preceding section			
н. '	Vi	ruses			A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
•	To	what extent does the textbook include discussions about:			
,	1.	The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x	
<i>.</i>	2.	A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	
	3.	The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x	
	A.	Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18)	х		
4	5.	STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Nun.ber 17, p. S-12; Statement, Number 10, p. 19)	x		
****		Factual inaccuracies, if any, in the preceding section			
. 1	Mo	onera			
7	Го	what extent does the textbook include discussions about:			
1	1.	The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19)	x		
2	2.	A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		X	
3	3.	The distinguishing structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	X		Pr. 6:4 0 to 1:



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limite1 emphasis	Not covered
I. M	onera—Continued					
4.	Reproduction? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			х		
5.	Diseases caused by monera; e.g., strep throat, urinary tract infections, and STDs? (Science Framework Addendum, p. 27)	x				
6.	Interrelationships with other living things and the environment; e.g., nitrogen fixation and decomposition? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)	x				
7.	STIS issues; e.g., food production, waste disposal, pollution, and genetic engineering? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			x		
	Factual inaccuracies, if any, in the preceding section		<u> </u>			1



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Factual inaccuracies, if any, in the preceding section

J.	Pr	otists				
-		what extent does the textbook include discussions about:				
	1.	The evolution, the phylogeny, and taxonomy of protists? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x		
	2.	Protists' structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	х			
	3.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		x		
	4.	Diseases caused by protists; e.g., gingivitis, dysentery, and malaria? (Science Framework Addendum, p. 27; Statement, Number 10, p. 19)		х		
	5.	Interrelationships with other living things and the environment; e.g., symbiosis? (Standards, Number 4, p. S-5; Statement, Number 10, p. 19)		x		
	6.	STIS issues; e.g., food sanitation, industrial products, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 10, p. 19)			x	
		Factual inaccuracies, if any, in the preceding section				
K.	Fu	ngi				
	To	what extent does the textbook include discussions about:		1		
	1.	The evolution, the phylogeny, and taxonomy of fungi? (Science Framework Addendum, pp. 14–15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		X		
	2.	A historical perspective; e.g., Fleming? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x	
	3.	The fungal structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x		
·	4.	Growth and development? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			X	



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
K. Fu	ngi-Continued					
5.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		X			
6.	Diseases caused by fungi; e.g., ringworm, yeast infection, athlete's foot, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5; Statement, Number 10, p. 19)			х		
7.	Interrelationships with other living things and the environment; e.g., decomposition, symbiosis (lichen), and mycorrhiza? (Standards, Number 10, p. S-8; Statement, Number 10, p. 19)			x		
8.	STIS issues; e.g., food (toxic mushrooms), beverages, antibiotics, and fungicides? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			x		200



	Factual inaccuracies, if any, in the preceding section					
. F	Plants					•
7	To what extent does the textbook include discussions about:					
1	The evolution, the phylogeny, and taxonomy of plants? (Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x			
2	Plant structures and their functions; e.g., photosynthesis, food storage, and transport? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9; Statement, Number 10, p. 19)	x				
3	3. Adaptations for land existence? (Science Framework Addendum, pp. 18, 22, 24; Statement, p. 16, Number 10, p. 19)		x			
4	Growth and development, including the role of hormones? (Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		x			
5	5. Propagation and reproduction, including role of pollinators? (Science Framework Addendum, p. 25; Statement, Number 5, p. 18)		x			
6	6. Response to stimuli? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8)			X		
7	Health and disease states of plants; e.g., nutrient deficiencies and parasites? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			x	1	
8	STIS issues; e.g., horticulture and environmental concerns, timber harvest, defolients, and endangered species? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)			x	!	
	Factual inaccuracies, if any, in the preceding section		} =	∤		•
1. A	Animals		i		; ;	1
Т	o what extent does the textbook include discussions about:		F	; ;	1	
1	. The taxonomic diversity of animals? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)		X		1	1



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		Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. A	nim	als—Continued				}	
2.	Inv	vertebrates	1	i	1	!	1
	To	what extent does the textbook include discussions about:		:	;		1
	a.	Invertebrate structures and their functions; e.g., systems, symmetry? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)		x	, , ,		; !
resistance and eath officer	b.	Evolutionary relationships and fossil histories? (Standards, Number 15, p. S-11; Statement, p. 16, and Number 9, p. 19)	*		X	,	
	c.	Adaptations; e.g., for feeding and locomotion? (Standards, Number 15, p. S-11)	1	X			
PO	đ	Growth, development, and embryology? (Science Framework Addendum, pp. 30–31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)			x		20



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	STIS issues; e.g., wildlife management, live animals used in research medicine, and endangered species? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-1 Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p.	1. and		x	
f.	Behavior, e.g., innate versus learned, social behaviors, or communica (Standards, Number 5, p. S-6; Statement, Number 9, p. 19)	ations?		x	
c.	Reproduction? (Standards, Number 13, p. S-10; Statement, Number 5, p. 18)		x		
d.	Growth, development, and embryology? (Science Framework Addendum, p. 31; Standards, Number 9, p. S-8 p. S-10; Statement, Number 5, p. 18)	, and Number 13,	x		
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, p. 30)	х			
b .	Evolutionary relationships and fossil histories? (Science Framework Addendum, pp. 15, 18; Statement, p. 16, and Nu	imber 9, p. 19)		х	
	what extent does the textbook include discussions about: Chordate structures and their functions; e.g., comparative anatomy a and classical chordate characteristics? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p Number 9, p. S-8; Statement, Number 9, p. 19)				
	ordates (nonhuman)				
h.	STIS issues; e.g., agriculture, food, pests, pest control, and aquaculta (Standards, Number 17, p. S-12; Statement, Number 5, p. 18, and Nu	nre? mber 11, p. 19)	x		
g.	Health and diseases; e.g., vectors and parasitism? (Science Framework Addendum, p. 25; Statement, Number 13, p. 20)		x	
f.	Behavior, e.g., innate versus learned, social behaviors, communicati tive behaviors? (Standards, Number 5, p. S-6)	on, and reproduc-	х		
е.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S Number 5, p. 18, and Number 9, p. 19)	-10; Statement,		x	

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—	Continued					
4. Vertebri	ates (Human)		<u>.</u> 1			<u> </u>
To what e	xtent does the textbook include discussions about:					1
a. Stn	ucture, function, and maintenance of major body systems:		,			1
(1)	Nervous system and sense organs?	X				
(2)	Circulatory system?		X			
(3)	Digestive system?		X	-		
<u>n</u>	Respiratory system?			X	*	
(5)	Reproductive system?			X		f.



	(6) Musculoskeletal system?		X		
	(7) Excretory system?			x	
·	(8) Integumentary system?				x
•	(9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20)		x		
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19)			x	
c.	Adaptations; e.g., for feeding and tocomotion? (Science Framework Addendum, pp. 32, 33, 35, 37)			x	
d.	Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20)		x		
e.	Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20)			x	
f.	Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12)	x			
g.	Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19)	x			
h.	STIS issues; e.g., substance abuse? (Science Framework Addendum, p. 35)			x	
i.	STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Framework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 13 and Number 16, p. 20)	x			
	Factual inacc: rac'es, if any, in the preceding section*				

^{*}A factual inaccuracy was noted in the ection. The publisher has given assurances that the inaccuracy will be corrected in the next edition of this book. For more information see "Factual Inaccuracies" on page xii.



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II. BIOLOGY: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Secing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- 20 Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.



INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- · Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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REVIEW OF PROCESS SKILLS'

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	, X				
2. Communicating?	X	•		•	•
3. Comparing?	· X	•		•	•
4. Organizing?	•	•	X		•
5. Relating?	•		X		•
6. Inferring?	•			X	•
7. Applying?				X	•

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Science Framework Addendum, p. 5.



ERIC

Full Text Provided by ERIC

^{*}Science Framework Addendum, pp. 4-5.

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III. BIOLOGY: TEACHER'S EDITION

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	hat extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)	x			
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	X			
3.	Material that engages students in using higher-order thinking skills? (Science Framev ork Addendum, p. 104, "Organization of Materials," Number 4)	х			
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)	х			



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5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")				х
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)	x			
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x		
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)				x
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	x			
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)			x	



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IV. BIOLOGY: STUDENT'S LABORATORY MANUAL

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Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
A. To what extent does the student's laboratory manual include:				
1. Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
2. Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	х			
3. Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	x			
4. Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	x			
		1	L	Apr



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	5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		x		
	6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				x
В.		what extent are the following process skills taught throughout the laboratory manual:* Observing?	x			
	2.	Communicating?	x			
	3.	Comparing?	x			
	4.	Organizing?		x		
	5.	Relating?		x		
	6.	Inferring?		X		
	7.	Applying?			X	

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. BIOLOGY: TEACHER'S EDITION OF THE LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Nos covered
To v	what extent does the teacher's edition of the laboratory manual include:				•
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)		x	: :	
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	· · · · · · · · · · · · · · · · · · ·	X	<u>+</u>	
3.	Material which guides students to use higher-order thir king skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	· · · · · · · · · · · · · · · · · · ·	•	X	
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		X		
	reports?		X	•	<u>.</u>



5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies." Number 4)		x		
6.	Resource lists for acquiring:				
	a. Equipment?	X	*		
	b. Chemicals?	X			
	c. Supplies?	X			
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	x			
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)	х			
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				x
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)		x		
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)	······································		-	x



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I. BIOLOGY: CONTENT (STUDENT'S EDITION)

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		Consens	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
A. 1	W	hat is biology?			······································	1	1
-	То	what extent does the textbook include discussions about:		(1	
1	1.	The distinguishing characteristics of life; e.g., reproduction and growth? (Science Framework Addendum, p. 14)		x			
2	2.	Scientific reasoning; e.g., induction, deduction, observation, fact, hypothesis, theory, and inference? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1; Statement,* p. 9)	-• · · · · · · · · · · · · · · · · · · ·	*···································	X	•	**************************************
3	3.	Research methods and tools of biologists; e.g., microscopes, centrifuge, and metric measurement? (Science Framework Addendum, pp. 23, 26, 27)	• • • • • • • • • • • • • • • • • • •	x	,,, <u>,,,,</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		* · · · · · · · · · · · · · · · · · · ·
4	1.	Science, Technology, Individuals, and Society (STIS) issues; e.g., health, ethical concerns, careers, and economic impact? (Science Framework Addendum, p. 13; Statement, Number 13 and Number 16, p. 20)	x		, <u> </u>	Complete to the second	Si



_	Factual inaccuracies, if any, in the preceding section [‡]			-	
В.	Ecology				
	To what extent does the textbook include discussions about:	1			1 ; }
	1. Diversity and stability in ecosystems? (Science Framework Addendum, pp. 41-42)		X		
	 Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18) 		x		
	3. Levels of ecological organization; e.g., communities, biomes, and populations? (Science Framework Addendum, pp. 39, 42; Standards, Number 4, p. S-5, and Number 16, p. S-11; Statement, Number 11, p. 19)	x			
	4. The energy flow through the ecosystem; e.g., trophic levels and energy pyramids? (Science Framework Addendum, p. 40; Statement, Number 4, p. 18, and Number 11, p. 19)		x		
	5. The impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18, and Number 11, p. 20)		x	1	
	Factual inaccuracies, if any, in the preceding section				
C.	Heredity	,	1	:	!
	To what extent does the textbook include discussions about:	•		1	•

NOTE: The secondary biology textbook review instrument is correlated with the following resource documents:

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[.] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{· *}Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

[•] The Statement on Preparation in Natural Science Expected of Entering Freshmen is cited as Statement.

The first two documents are published by the California State Department of Education. The last one listed was issued by the Academic Senates of the California Community Colleges, the California State University, and the University of California in cooperation with the California Round Table on Educational Opportunity. Each publication is available from the California State Department of Education (see pages 403 and 404 for ordering information).

^{&#}x27;See "Factual Inaccuracies" on page xii.

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******	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
C. He	eredity—Continued					
2.	Scientific tools to model heredity; e.g., probability, statistics, and pedigrees? (Science Framework Addendum, p. 20; Standards, Number 14, p. S-10)	x				
3.	Cell cycle, meiosis, and mitosis? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 5, p. 18)		x			
4.	Chromosomes, genes, DNA, and RNA? (Science Framework Addendum, p. 19; Standards, Number 12, p. 8-9; Statement, Number 7, p. 18)		x			
5.	Biochemical aspects of heredity; e.g., transcription, translation, and protein synthesis? (Science Framework Addendum, p. 19; Statement, Number 7, p. 18)		x			



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6	Gene and chromosome mutations; e.g., inversions, insertions, and nonsense codons? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)		x			
7.	Human genetic variability; e.g., color blindness, baldness, and blood groups? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10; Statement, Number 7, p. 18)			x		
8.	The influence of heredity on health and disease; e.g., sickle-cell anemia, hemophilia, and Down's syndrome? (Standards, Number 12, p. S-9; Statement, Number 13, p. 20)			x		
9.	STIS issues; e.g., selective breeding and techniques and ethics of genetic engineering? (Science Framework Addendum, pp. 19–20; Statement, Number 5, p. 18, and Number 13, p. 20)	x				
	Factual inaccuracies, if any, in the preceding section				+	
	volution o what extent does the textbook include discussions about:					
	The genetic basis of evolution; e.g., genes as the source of variation? (Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	1		X		
2.	A historical perspective; e.g., works of Lamarck, Wallace, and Darwin? (Science Framework Addendum, p. 8; Standards, p. S-1, and Number 15, p. S-11; Statement, p. 12, and Number 6, p. 18)		x			
3.	Scientific evidence; e.g., paleontology, genetics, biochemistry, and comparative anatomy? (Science Framework Addendum, pp. 20, 31; Statement, Number 6, p. 18)		X			
4.	Fossil evidence for evolution; e.g., skeletons, pollen, dating r. ethous, and sequence of fossil forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)		x			
5.	Evolutionary processes and their effects; e.g., selection, drift, adaptation, speciation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)		x			



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D. E	volutionContinued					
6.	Scientific theories about the origin of life; e.g., inorganic to organic? (Science Framework Addendum, p. 24; Statement, Number 6, p. 18)	,	X			
7.	The history of life on earth; e.g., evolution from unicellular to multicellular and more specialized forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)		;	x		† · · · · · · · · · · · · · · · · · · ·
8.	Human evolution: e.g., paleoanthropology and the work on "Lucy"? (Science Framework Addendum, p. 35; Statement, Number 6, p. 18)			X		
	Factual inaccuracies, if any, in the preceding section		<u></u>	<u> </u>	l	



E.	Cl	assification			
	То	what extent does the textbook include discussions about:			
	1.	A historical perspective; e.g., Aristotle and Linnaeus? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	
	2.	Evolutionary relationships as the basis of classification? (Science Framework Addendum, pp. 20, 31; Statement, Number 8, p. 19)		х	
	3.	Principles of classification; e.g., hierarchy and binomial nomenclature? (Standards, Number 3, p. S-5; Statement, Number 8, p. 19)		x	
	4.	classification?			
		(Science Framework Addendum, p. 20; Statement, Number 8, p. 19)		x	
		Factual inaccuracies, if any, in the preceding section			
F.	Ch	nemistry			
	To	what extent does the textbook include discussions about:			
	1.	Atoms, molecules, chemical bonds, reactions, and the periodic table? (Science Framework Addendum, p. 24; Statement, Number 2, p. 17)	x		
	2.	The structure and function of molecules in living things; e.g., proteins, nucleic acids, lipids, and polysaccarides? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 2, p. 17)	х		
	3.	Energy processes; e.g., laws of thermodynamics, diffusion, osmosis, and enzyme kinetics? (Science Framework Addendum, p. 19)	x		
-		Factual inaccuracies, if any, in the preceding section			
G.	Ce	lls			
	То	what extent does the textbook include discussions about:			
	1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	



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G. C	ells—Continued					
2.	The structure and function of cells and cell components, including the similarities and differences between plant and animal cells? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 1, p. 17)			x	1 1	1
3.	Cellular homeostasis? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)		i		X	
4.	Cellular respiration? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)		X			:
5.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9; Statement, Number 14, p. 18)		X			



5.0

6	Levels of organization, cells to systems? (Standards, Number 2, p. S-4; Statement, Number 3, p. 18)		x	
	Factual inaccuracies, if any, in the preceding section			
H. V	'iruses			
T	o what extent does the textbook include discussions about:			
1	The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)			x
2	. A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	
3	The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x	
4.	Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18)		X	
5.	STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)	x		
	Factual inaccuracies, if any, in the preceding section			
I. N	Ionera		•	
	o what extent does the textbook include discussions about:			
1.	The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19)	x		
2.	A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)	x		
3.	The distinguishing structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x		
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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
I. M	Ionera—Continued		!			
4	Reproduction? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	:		X		
5.	Diseases caused by monera; e.g., strep throat, urinary tract infections, and STDs? (Science Framework Addendum, p. 27)			X	,	
6.	Interrelationships with other living things and the environment; e.g., nitrogen fixation and decomposition? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)		· · · · · · · · · · · · · · · · · · ·	X		
7.	STIS issues; e.g., food production, waste disposal, pollution, and genetic engineering? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)	•		X		· · · · · · · · · · · · · · · · · · ·
	Factual inaccuracies, if any, in the preceding section		<u></u>	····	A 11 PAGE	1



J. P	rotists		
T	o what extent does the textbook include discussions about:		
1.	The evolution, the phylogeny, and taxonomy of protists? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x	
2.	Protists' structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x	
3.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	x	
4.	Diseases caused by protists; e.g., gingivitis, dysentery, and malaria? (Science Framework Addendum, p. 27; Statement, Number 10, p. 19)	x	
5.	Interrelationships with other living things and the environment; e.g., symbiosis? (Standards, Number 4, p. S-5; Statement, Number 10, p. 19)	X	
6.	STIS issues; e.g., food sanitation, industrial products, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 10, p. 19)	x	
	Factual inaccuracies, if any, in the preceding section		
ζ. F	ungi		
To	what extent does the textbook include discussions about:		;
1.	The evolution, the phylogeny, and taxonomy of fungi? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	x	
2.	A historical perspective; e.g., Fleming? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x
3.	The fungal structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x	
4.	Growth and development? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	x	



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
K. Fu	ngi—Continued					
5.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			X		
6.	Diseases caused by fungi; e.g., ringworm, yeast infection, athlete's foot, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5; Statement, Number 10, p. 19)			х		
7.	Interrelationships with other living things and the environment; e.g., decomposition, symbiosis (lichen), and mycorrhiza? (Standards, Number 10, p. S-8; Statement, Number 10, p. 19)			X	•	
8.	STIS issues; e.g., food (toxic mushrooms), beverages, antibiotics, and fungicides? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			x		



	Factual inaccuracies, if any, in the preceding section					
. P	lants					
To	o what extent does the textbook include discussions about:				•	
1.	The evolution, the phylogeny, and taxonomy of plants? (Standards, Number 3, p. S-5; Statement, Number 10, p. 19)			x		
2.	Plant structures and their functions; e.g., photosynthesis, food storage, and transport? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9; Statement, Number 10, p. 19)		x			Anthony of Children Common
3.	Adaptations for land existence? (Science Framework Addendum, pp. 18, 22, 24; Statement, p. 16, Number 10, p. 19)			x		
4.	Growth and development, including the role of hormones? (Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)			x		Partie of State of St
5.	Propagation and reproduction, including role of pollinators? (Science Framework Addendum, p. 25; Statement, Number 5, p. 18)		x			
6.	Response to stimuli? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8)		1	x		
7.	Health and disease states of plants; e.g., nutrient deficiencies and parasites? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)		!	X		and the same of th
8.	STIS issues; e.g., horticulture and environmental concerns, timber harvest, defolients, and endangered species? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)			X		
	Factual inaccuracies, if any, in the preceding section					** <u> </u>
í. Ar	nimals		· · · · · · · · · · · · · · · · · · ·		,	
То	what extent does the textbook include discussions about:	1		!	!	
1.	The taxonomic diversity of animals? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	X	; ;		! :	



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued					
2. Invertebrates					
To what extent does the textbook include discussions about:					
a. Invertebrate structures and their functions; e.g., systems, symmetry? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)		x			
b. Evolutionary relationships and fossil histories? (Standards, Number 15, p. S-11; Statement, p. 16, and Number 9, p. 19)				X	
c. Adaptations; e.g., for feeding and locomotion? (Standards, Number 15, p. S-11)		X			
d. Growth, development, and embryology? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		x			



e.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10; Statement, Number 5, p. 18, and Number 9, p. 19)		x	
f.	Behavior, e.g., innate versus learned, social behaviors, communication, and reproductive behaviors? (Standards, Number 5, p. S-6)	x		
g.	Health and diseases; e.g., vectors and parasitism? (Science Framework Addendum, p. 25; Statement, Number 13, p. 20)		x	
h.	STIS issues; e.g., agriculture, food, pests, pest control, and aquaculture? (Standards, Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 19)		x	
3. Ch	ordates (nonhuman)			
	what extent does the textbook include discussions about:			
a .	Chordate structures and their functions; e.g., comparative anatomy and physiology and classical chordate characteristics? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8; Statement, Number 9, p. 19)	x		Tage of the state
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, pp. 15, 18; Statement, p. 16, and Number 9, p. 19)		x	
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, p. 30)	x		
d.	Growth, development, and embryology? (Science Framework Addendum, p. 31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	x	;	
e.	Reproduction? (Standards, Number 13, p. S-10; Statement, Number 5, p. 18)	x		
f.	Behavior, e.g., innate versus learned, social behaviors, or communications? (Standards, Number 5, p. S-6; Statement, Number 9, p. 19)	x		
g.	STIS issues; e.g., wildlife management, live animals used in research, veterinary medicine, and endangered species? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 20)	x	:	



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued					
4. Vertebrates (Human)		,			
To what extent does the textbook include discussions about:	1				:
a. Structure, function, and maintenance of major body systems:	! !	1			;
(1) Nervous system and sense organs?	: :	X	!	! !	:
(2) Circulatory system?	÷ · · · · ·	X	· · · · · · · · · · · · · · · · · · ·		1
(3) Digestive system?	→ 2 •	:	X	·	
(4) Respiratory system?	, 	•	X		* · · · · · · · · · · · · · · · · · · ·
(5) Reproductive system?		# · · · · · · · · · · · · · · · · · · ·	X	· · · · · ·	-



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	(6) Musculoskeletal system?			X	
	(7) Excretory system?			X	
	(8) Integumentary system?				X
	(9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20)		x		
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19)			x	
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37)		x		
d.	Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20)			x	man, minerality rev + p dan an ann an
e.	Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20)			x	
f.	Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12)	x		!	
g.	Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19)		x		**************************************
h.	STIS issues; e.g., substance abuse? (Science Framework Addendum, p. 35)	,		x	
i.	STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Framework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 13 and Number 16, p. 20)	x			
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II. BIOLOGY: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a reess by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.



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INFERRING

- · Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- · Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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REVIEW OF PROCESS SKILLS'

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	x		•) ;	
2. Communicating?	X				
3. Comparing?		X			
4. Organizing?		 	X	!	1
5. Relating?		i i	X		
6. Inferring?		*	X		1
7. Applying?				X	**************************************

Science Framework Addendum, p. 5.

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^{*}Science Framework Addendum, pp. 4-5.

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III. BIOLOGY: TEACHER'S EDITION

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the textbook include:			1	
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)	x		† - -	;
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	x	eran ur ar e januarian e		
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	X		·	:
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)		x		



5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")				x
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)		x		
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		X	f i	
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)	-			x
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	x	+		
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)	 	· · · · · · · · · · · · · · · · · · ·	X	



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IV. BIOLOGY: STUDENT'S LABORATORY MANUAL

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	Content	lligh er.phasis	M)derate ei sphasis	Limited emphasis	Not covered
A. To	what extent does the student's laboratory manual include:	•			1
1.	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x	*:		
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	X	•	. . , <u>.</u>	
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	. 4.	. X	· · · · · · · · · · · · · · · · · · ·	<u> </u>
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addenaum, p. 104, "Content and Process," Number 5)	X	• • • • • • • • • • • • • • • • • • •		



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5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	x			
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			x	
	what extent are the following process skills taught throughout the laboratory manual:* Observing?	x			
2.	Communicating?	x			
3.	Comparing?		х		
4.	Organizing?		X		
5.	Relating?		х		
6.	Inferring?		х	†	
7.	Applying?		X	 	

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. BIOLOGY: TEACHER'S EDITION OF THE LABORATORY MANUAL

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	Content	lligh emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what exists $f = f \circ \phi$ reacher's edition of the laboratory manual include:		!	1	
1.	Información encourages the shared responsibility for safety in the science laboratory? (Science Francwork Addendi: p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)		x		
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	- 	X	•	•
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		X		•
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	· · · . · . · . · . · . · . · .	X		
	the fact that the same of the				



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5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)		x	
6.	Resource lists for acquiring:			
	a. Equipment?	x	;	
	b. Chemicals?	x		
	c. Supplies?	X		
-	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	x		
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)	x		
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			• • • · · · · · · · · · · · · · · · · ·
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)		x	
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)		x	



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I. BIOLOGY: CONTENT (STUDENT'S EDITION)

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High Substantial Moderate Limited Content emphasis emphasis emphasis emphasis Not covered A. What is biology? To what extent does the textbook include discussions about: 1. The distinguishing characteristics of life; e.g., reproduction and growth? (Science Framework Addendum, p. 14) 2. Scientific reasoning; e.g., induction, deduction, observation, fact, hypothesis, theory, and inference? (Science Framework Addendum, pp. 8, 12; Standards, p. S-1; Statement, p. 9) 3. Research methods and tools of biologists; e.g., microscopes, centrifuge, and metric measurement? (Science Framework Addendum, pp. 23, 26, 27) 4. Science, Technology, Individuals, and Society (STIS) issues; e.g., health, ethical concerns,



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(Science Framework Addendum, p. 13; Statement, Number 13 and Number 16, p. 20)

careers, and economic impact?

_		Factual inaccuracies, if any, in the preceding section [‡]	_		:		1
3.	Ec	ology	1		· ·		
	To	what extent does the textbook include discussions about:		1			i
	1.	Diversity and stability in ecosystems? (Science Framework Addendum, pp. 41-42)	x		1		
	2.	Biotic and abiotic 'errelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42: Standards, Number 16, p. S-11; Statement, Number 4, p. 18)		x			
	3.	Levels of ecological organization; e.g., communities, biomes, and populations? (Science Framework Addendum, pp. 39, 42; Standards, Number 4, p. S-5, and Number 16, p. S-11; Statement, Number 11, p. 19)	x		:		
•	4.	The energy flow through the ecosystem; e.g., trophic levels and energy pyramids? (Science Framework Addendum, p. 40; Statement, Number 4, p. 18, and Number 11, p. 19)		X	;		-
	5.	The impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18, and Number 11, p. 20)		x			
_		Factual inaccuracies, if any, in the preceding section		†	:		
	He	redity		i	1	*	· · · · · · · · · · · · · · · · · · ·
		what extent does the textbook include discussions about:		• •	•	· •	,
•		A historical perspective; e.g., Mendel, Morgan, Sutton, Watson, and Crick? (Science Framework Addendum, p. 8; Standards, Number 12, p. S-9, and Number 14, p. S-10; Statement, p. 12)	x	:			

NOTE: The secondary biology textbook review instrument is correlated with the following resource documents:

^{*}See "Factual Inaccuracies" on page xii.



[•] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{• *}Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

^{• &#}x27;The Statement on Preparation in Natural Science Expected of Entering Freshmen is cited as Statement.

The first two documents are published by the California State Department of Education. The last one listed was issued by the Academic Senates of the California Community Colleges, the California State University, and the University of California in cooperation with the California Round Table on Educational Opportunity. Each publication is available from the California State Department of Education (see pages 403 and 404 for ordering information).

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C. He	eredity—Continued					
2.	Scientific tools to model heredity; e.g., probability, statistics, and pedigrees? (Science Framework Addendum, p. 20; Standards, Number 14, p. S-10)	;	x			;
3.	Cell cycle, meiosis, and mitosis? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 5, p. 18)		x			
4.	Chromosomes, genes, DNA, and RNA? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)	x				
5.	Biochemical aspects of heredity; e.g., transcription, translation, and protein synthesis? (Science Framework Addendum, p. 19; Statement, Number 7, p. 18)			x		



6	Gene and chromosome mutations: c.g., inversions, insertions, and nonsense codons? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)		x		
7	Human genetic variability; e.g., color blindness, baldness, and blood groups? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10; Statement, Number 7, p. 18)) (. x		· · · · · · · · · · · · · · · · · · ·
8	The influence of heredity on health and disease; e.g., sickle-cell anemia, hemophilia, and Down's syndrome? (Standards, Number 12, p. S-9; Statement, Number 13, p. 20)	: : : : X			- 4
9	STIS issues; e.g., selective breeding and techniques and ethics of genetic engineering? (Science Framework Addendum, pp. 19-20; Statement, Number 5, p. 18, and Number 13, p. 20)	X			. •
	Factual inaccuracies, if any, in the preceding section				
	volution o what extent does the textbook include discussions about:	:			; ;
	The genetic basis of evolution; e.g., genes as the source of variation? (Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	e e	; X		1
2.	A historical perspective; e.g., works of Lamarck, Wallace, and Darwin? (Science Framework Addendum, p. 8; Standards, p. S-1, and Number 15, p. S-11; Statement, p. 12, and Number 6, p. 18)	. <u> </u>	x	<u>.</u>	<u> </u>
3.	Scientific evidence; e.g., paleontology, genetics, biochemistry, and comparative anatomy? (Science Framework Addendum, pp. 20, 31; Statement, Number 6, p. 18)	x		† * · · ·	• • • • • • • • • • • • • • • • • • • •
4.	Fossil evidence for evolution; e.g., skelctons, pollen, dating methods, and sequence of fossil forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	x	· · · · · · · · · · · · · · · · · · ·		
5.	Evolutionary processes and their effects; e.g., selection, drift, adaptation, speciation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)	x			• • • • • • • • • • • • • • • • • • • •



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D. E	volution—Continued					
6.	Scientific theories about the origin of life; e.g., inorganic to organic? (Science Framework Addendum, p. 24; Statement, Number 6, p. 18)				X	•
7.	The history of life on earth; e.g., evolution from unicellular to multicellular and more specialized forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)			· • · · · · · · · · · · · · · · · · · ·	X	
8.	Human evolution; e.g., paleoanthropology and the work on "Lucy"? (Science Framework Addendum, p. 35; Statement, Number 6, p. 18)		X			1
-	Factual inaccuracies, if any, in the preceding section		4 w w	·····	<u> </u>	



3/9

E.	CI	assification					1
	То	what extent does the textbook include discussions about:	İ				
	1.	A historical perspective; e.g., Aristotle and Linnaeus? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x		
··· <u>-</u>	2.	Evolutionary relationships as the basis of classification? (Science Framework Addendum, pp. 20, 31; Statement, Number 8, p. 19)				x	
	3.	Principles of classification; e.g., hierarchy and binomial nomenclature? (Standards, Number 3, p. S-5; Statement, Number 8, p. 19)			x		
	4.	classification?				***************************************	
		(Science Framework Addendum, p. 20; Statement, Number 8, p. 19)		 	X		
		Factual inaccuracies, if any, in the preceding section					
F.	Ch	pemistry					
	To what extent does the textbook include discussions about:						
	1.	Atoms, molecules, chemical bonds, reactions, and the periodic table? (Science Framework Addendum, p. 24; Statement, Number 2, p. 17)		X			# 1
	2.	The structure and function ofolecules in living things; e.g., proteins, nucleic acids, lipids, and polysaccarides? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 2, p. 17)	x				
	3.	Energy processes; e.g., laws of thermodynamics diffusion, osmosis, and enzyme kinetics? (Science Framework Addendum, p. 19)		x	+		
		Factual inaccuracies, if any, in the preceding section			• • • • • • • • • • • • • • • • • • • •		
G.	Ce	lls					
		what extent does the textbook include discussions about:	1				<u>}</u>
	1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x		



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G. C	ells—Continued					
2.	The structure and function of ceils and cell components, including the similarities and differences between plant and animal cells? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statemen; Number 1, p. 17)	x	·			
3.	Cellular homeostasis? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)	-	x			1
4.	Cellular respiration? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)	<u> </u>	X	* *		. <u></u>
5.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9; Statement, Number 14, p. 18)			X		



6.	Levels of organization, cells to systems? (Standards, Number 2, p. S-4; Statement, Number 3, p. 18)		x	:	
	Factual inaccuracies, if any, in the preceding section		•	! !	
H. V	iruses			: !	! !
T	o what extent does the textbook include discussions about:	 		; !	1
1.	The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14–15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x	; ; ;	
2.	A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	1	
3.	The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	x			
4.	Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18)		x		
5.	STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, p. S- 2; Statement, Number 10, p. 19)	x	· · · · · · · · · · · · · · · · · · ·		
	Factual inaccuracies, if any, in the preceding section				
I. M	Ionera	· ·	•	1	1
T	o what extent does the textbook include discussions about:	· · · · · · · · · · · · · · · · · · ·		:	1
1.	The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19)		X	: 	
2.	A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			x	
3.	The distinguishing structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x			



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. M	Ionera—Continued		1			
4,	Reproduction? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	1		x		
5.	Diseases caused by monera; e.g., strep throat, urinary tract infections, and STDs? (Science Framework Addendum, p. 27)			X	!	1
6.	Interrelationships with other living things and the environment; e.g., nitrogen fixation and decomposition? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			X	· · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • •
7.	STIS issues; e.g., food production, waste disposal, pollution, and genetic engineering? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			X		,
	Factual inaccuracies, if any, in the preceding section			<u> </u>	<u> </u>	٠



J. I	Protists				
1	To what extent does the textbook include discussions about:		•	1	
1	The evolution, the phylogeny, and taxonomy of protists? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		: . X	: :	4
2	Protists' structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x	·	 	An season were the con-
3	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	X	1		
4	Diseases caused by protists; e.g., gingivitis, dysentery, and malaria? (Science Framework Addendum, p. 27; Statement, Number 10, p. 19)		X	<u>-</u>	*
5	i. Interrelationships with other living things and the environment; e.g., symbiosis? (Standards, Number 4, p. S-5; Statement, Number 10, p. 19)		 	x	<u>.</u>
6	STIS issues; e.g., food sanitation, industrial products, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 10, p. 19)		*		X
	Factual inaccuracies, if any, in the preceding section				1 7 1 1 1 1
K. F	ungi	;	:	!	;
T	o what extent does the textbook include discussions about:	:			
1	. The evolution, the phylogeny, and taxonomy of fungi? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	:		X	
2	. A historical perspective; e.g., Fleming? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)	***************************************		X	
3	. The fungal structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		X		
4	. Growth and development? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)	· · · · · · · · · · · · · · · · · · ·	X		1



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K. Fu	ngiContinued					
5.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		X			
6.	Diseases caused by fungi; e.g., ringworm, yeast infection, athlete's foot, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5; Statement, Number 10, p. 19)	•	•	x	:	• • • • • • • • • • • • • • • • • • • •
7.	Interrelationships with other living things and the environment; e.g., decomposition, symbiosis (lichen), and mycorrhiza? (Standards, Number 10, p. S-8; Staten ent, Number 10, p. 19)	• ,			X	•
8.	STIS issues; e.g., food (toxic mushrooms), beverages, antibiotics, and fungicides? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)	•	•	X	•	. <u>-</u>



	Factual inaccuracies, if any, in the preceding section				
. P	lants				
T	o what extent does the textbook include discussions about:	,			
1	. The evolution, the phylogeny, and taxonomy of plants? (Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		; X	1	
2	Plant structures and their functions; e.g., photosynthesis, food storage, and transport? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9; Statement, Number 10, p. 19)	x	. •	•	•
3.	. Adaptations for land existence? (Science Framework Addendum, pp. 18, 22, 24; Statement, p. 16, Number 10, p. 19)			•	x
4	. Growth and development, including the role of hormones? (Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		X	. •	
5.	Propagation and reproduction, including role of pollinators? (Science Framework Addendum, p. 25; Statement, Number 5, p. 18)		X	• • • • • • • • • • • • • • • • • • •	••••
6.	. Response to stimuli? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8)		X	,	•
7.	Health and disease states of plants; e.g., nutrient deficiencies and parasites? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)	1	.	X	•
8.	STIS issues; e.g., horticulture and environmental concerns, timber harvest, defolients, and endangered species? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)		•	 X	•
	Factual inaccuracies, if any, in the preceding section	•	•	•	
l. A	nimals				
To	o what extent does the textbook include discussions about:	1			
1.	The taxonomic diversity of animals? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	X			



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M. A 1	nimals—Continued	1	·			1
2.	Invertebrates	;				
	To what extent does the textbook include discussions about:	!				
	a. Invertebrate structures and their functions; e.g., systems, symmetry? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	X				,
	b. Evolutionary relationships and fossil histories? (Standards, Number 15, p. S-11; Statement, p. 16, and Number 9, p. 19)		• • • • • • • • • • • • • • • • • • •	X		•
	c. Adaptations; e.g., for feeding and locomotion? (Standards, Number 15, p. S-11)	x			· · · · · ·	· · · · · · · · · · · · · · · · · · ·
	d. Growth, development, and embryology? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	x	* · · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		



e.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10; Statement, Number 5, p. 18, and Number 9, p. 19)	x				· · · · · · · · · · · · · · · · · · ·
f.	Behavior, e.g., innate versus learned, social behaviors, communication, and reproductive behaviors? (Standards, Number 5, p. S-6)		♣	x		•
g.	Health and diseases; e.g., vectors and parasitism? (Science Framework Addendum, p. 25; Statement, Number 13, p. 20)		1	Х	THE STATE OF	••• ••• ••• •
h.	STIS issues; e.g., agriculture, food, pests, pest control, and aquaculture? (Standards, Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 19)			X		**************************************
3. Ci	nordates (nonhuman)				† · · · · · · · · · · · · · · · · · · ·	
To	what extent does the textbook include discussions about:	!	:	•	•	•
a.	Chordate structures and their functions; e.g., comparative anatomy and physiology and classical chordate characteristics? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8; Statement, Number 9, p. 19)	x		:		
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, pp. 15, 18; Statement, p. 16, and Number 9, p. 19)		X	; ;	† · · · · · · · · · · · · · · · · · · ·	
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, p. 30)	X		. A		•• •
d.	Growth, development, and embryology? (Science Framework Addendum, p. 31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	X	<u> </u>		† · · · · · · · · · · · · · · · · · · ·	
e.	Reproduction? (Standards, Number 13, p. S-10; Statement, Number 5, p. 18)	X				*****
f.	Behavior, e.g., innate versus learned, social behaviors, or communications? (Standards, Number 5, p. S-6; Statement, Number 9, p. 19)	-†	· · · · · · · · · · · · · · · · · · ·	X	right our in the contract of t	•
g.	STIS issues; e.g., wildlife management, live animals used in research, veterinary medicine, and endangered species? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 20)	X	• • • • • • • • • • • • • • • • • • •		• · · · · · · · · · · · · · · · · · · ·	



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M. AnimalsContinued	•				
4. Vertebrates (Human)		:			
To what extent does the textbook include discussions about:	* 4	:			
a. Structure, function, and maintenance of major body systems:	ı	:			
(1) Nervous system and sense organs?		X			
(2) Circulatory system?		X	•	•	•
(3) Digestive system?	,	X			•
(4) Respiratory system?	<u> </u>	X	-		•
(5) Reproductive system?		X	·• ·		•



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(6) Musculoskeletal system?	X		[
(7) Excretory system?	X		م هد ر بد محت د د
(8) Integumentary system?		X	
(9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20)		x	:
b. Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19)	x		
c. Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37)		x	·
d. Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20)	x		• · · · · • • • • • • • • • • • • • • •
e. Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20)	x	†** · · · · · · · · · · · · · · · · · ·	
f. Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Franework Addendum, p. 35; Standards, Number 17, p. S-12)	**	X	
g. Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19)	··· · · · · · · · · · · · · · · · · ·	1	
h. STIS issues; e.g., substance abuse? (Science Framework Addendum p. 35)	· ···································	x	•
 i. STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Framework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 13 and Number 16, p. 20) 		x	
Factual inaccuracies, if any, in the preceding section		1	بيوس ب



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II. BIOLOGY: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.



INFERRING

- · Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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То	what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	,	Limited emphasis	Not covered
1.	Observing?	X			• •	
2.	Communicating?	X	•			-
3.	Comparing?	**:	. X	,	•	•
4.	Organizing?	• · · · · · · · · · · · · · · · · · · ·	· X .			
5.	Relating?			x		

REVIEW OF PROCESS SKILLS'

6. Inferring?

7. Applying?



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X

^{*}Science Framework Addendum, pp. 4-5.

Science Framework Addendum, p. 5.

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III. BIOLOGY: TEACHER'S EDITION

DEFINITION OF TERMS

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NOT COVERED means that the feature is not covered.

	Content	lligh emphasis	Moderate emphasis	Limited emphasis	Not covered
Точ	what extent does the teacher's edition of the textbook include:	!			
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)		x		
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	X		1	
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		x		
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)		x		





		,	.,	,	
5 .	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")				X
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)			x	
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x		
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)				>
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)		x		
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendian, p. 104, "Assessment and Evaluation," Number 1 and Num er 2)	x	-	1	†·



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IV. BIOLOGY: STUDENT'S LABORATORY MANUAL

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	Consens	High emphasis	Moderate emphasis	Limited emphasis	Not covered
A. To	what extent does the student's laboratory manual include:				
1.	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			; ;
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	x	†- · · ·	; - ····	† · · · · · · · · · · · · · · · · · · ·
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	x		• • • • • • • • • • • • • • • • • • •	#
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		X	· · · · · ·	*



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Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		1	X	***
Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				X
what extent are the following process skills taught throughout the laboratory manual:* Observing?	х			
Communicating?	X			
Comparing?	х			
Organizing?		X		
Relating?		X		
Inferring?		х		
Applying?			X	†
	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4) Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10) what extent are the following process skills taught throughout the laboratory manual:* Observing? Communicating? Organizing? Relating?	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4) Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10) what extent are the following process skills taught throughout the laboratory manual:* Observing? Communicating? X Comparing? Relating? Inferring?	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4) Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10) what extent are the following process skills taught throughout the laboratory manual:* Observing? Communicating? X Comparing? X Relating? Inferring?	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4) Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10) what extent are the following process skills taught throughout the laboratory manual:* Observing? Communicating? X Comparing? X Relating? X Inferring?

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. BIOLOGY: TEACHER'S EDITION OF THE LABORATORY MANUAL

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-	Content	lligh emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the laboratory manual include:		1	1	
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)	x			
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	· • · · · · · · · · · · · · · · · · · ·	•	X	·• -
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			X	•
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x	• • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •



٠,	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)	•	· · · · · · · · · · · · · · · · · · ·	A Commence of the Commence of
6.		•		•
U.	a. Equipment?	X		
	b. Chemicals?	X	•	• • • • • •
	c. Supplies?	.	•	•
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	X	•	• • • • • • •
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)	X	•	
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)	X	• · · · •	• • • • • •
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 21)			x
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)	• · · · · · · · · · · · · · · · · · · ·	•	X



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I. BIOLOGY: CONTENT (STUDENT'S EDITION)

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	Content	Iligh emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
. W	hat is biology?				*****	** = * * * =
To	o what extent does the textbook include discussions about:					
1.	The distinguishing characteristics of life; e.g., reproduction and growth? (Science Framework Addendum, p. 14)			X		
2.	Scientific reasoning; e.g., induction, deduction, observation, fact, hypothesis, theory, and inference? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1; Statement,* p. 9)	•		X		•
3.	Research methods and tools of biologists: e.g., microscopes, centrifuge, and metric measurement? (Science Frame work Addendum, pp. 23, 26, 27)		. x			•
4.	Science, Technology, Individuals, and Society (STIS) issues; e.g., health, ethical concerns, careers, and economic impact? (Science Framework Addendum, p. 13; Statement, Number 13 and Number 16, p. 20)		X			
•				•	A	ľ c:



		1	, 	
	Factual inaccuracies, if any, in the preceding section [‡]			
B.	Ecology			
	To what extent does the textbook include discussions about:			
	1. Diversity and stability in ecosystems? (Science Framework Addendum, pp. 41-42)		x	
	 Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18) 	x		
	3. Levels of ecological organization; e.g., communities, biomes, and populations? (Science Framework Addendum, pp. 39, 42; Standards, Number 4, p. S-5, and Number 16, p. S-11; Statement, Number 11, p. 19)	x		
	4. The energy flow through the ecosystem; e.g., trophic levels and energy pyramids? (Science Framework Addendum, p. 40; Statement, Number 4, p. 18, and Number 11, y. 19)		x	
	5. The impact of society on the natural environment; e.g., poilution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18, and Number 11, p. 20)	x		
	Factual inaccuracies, if any, in the preceding section			
C.	Heredity			
	To what extent does the textbook include discussions about:			
	1. A historical perspective; e.g., Mendel, Morgan, Sutton, Watson, and Crick? (Science Framework Addendum, p. 8; Standards, Number 12, p. S-9, and Number 14, p. S-10; Statement, p. 12)	x		

NOTE: The secondary biology textbook review instrument is correlated with the following resource documents:

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[.] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{• *}Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

^{• *}The Statement on Preparation in Natural Science Expected of Entering Freshmen is cited as Statement.

The first two documents are published by the California State Department of Education. The last one listed was issued by the Academic Scnates of the California Community Colleges, the California State University, and the University of California in cooperation with the California Round Table on Educational Opportunity. Each publication is available from the California State Department of Education (see pages 403 and 404 for ordering information).

^{&#}x27;See "Factual Inaccuracies" on page xii.

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
C. He	eredity—Continued					
2.	Scientific tools to model heredity; e.g., probability, statistics, and pedigrees? (Science Framework Addendum, p. 20; Standards, Number 14, p. S-10)			X	The state of the s	
3.	Cell cycle, meiosis, and mitosis? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 5, p. 18)		x			
4.	Chromosomes, genes, DNA, and RNA? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)		x			
5.	Biochemical aspects of heredity; e.g., transcription, translation, and protein synthesis? (Science Framework Addendum, p. 19; Statement, Number 7, p. 18)			x		



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6.	Gene and chromosome mutations; e.g., inversions, insertions, and nonsense codons? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)		x	
7.	Human genetic variability; e.g., color blindness, baldness, and blood groups? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10; Statement, Number 7, p. 18)		x	
8.	The influence of heredity on health and disease; e.g., sickle-cell anemia, hemophilia, and Down's syndrome? (Standards, Number 12, p. S-9; Statement, Number 13, p. 20)		х	
9.	STIS issues; e.g., selective breeding and techniques and ethics of genetic engineering? (Science Framework Addendum, pp. 19-20; Statement, Number 5, p. 18, and Number 13, p. 20)		x	
	Factual inaccuracies, if any, in the preceding section			
Ev	volution			
To	what extent does the textbook include discussions about:			
1.	The genetic basis of evolution; e.g., genes as the source of variation? (Standards, Number 15, p. S-11; Statement, Number 6, p. 18)		x	
2.	A historical perspective; e.g., works of Lamarck, Wallace, and Darwin? (Science Framework Addendum, p. 8; Standards, p. S-1, and Number 15, p. S-11; Statement, p. 12, and Number 6, p. 18)		x	
3.	Scientific evidence; e.g., paleontology, genetics, biochemistry, and comparative anatomy? (Science Framework Addendum, pp. 20, 31; Statement, Number 6, p. 18)		x	
4.	Fossil evidence for evolution; e.g., skeletons, pollen, datii.g methods, and sequence of fossil forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)		x	
5.	Evolutionary processes and their effects; e.g., selection, drift, adaptation, speciation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)	x		



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). Ev	volution—Continued					
6.	Scientific theories about the origin of life; e.g., inorganic to organic? (Science Framework Addendum, p. 24; Statement, Number 6, p. 18)			x		
7.	The history of life on earth; e.g., evolution from unicellular to multicellular and more specialized forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)			x		
8.	Human evolution; e.g., paleoanthropology and the work on "Lucy"? (Science Framework Addendum, p. 35; Statement, Number 6, p. 18)			x		
	Factual inaccuracies, if any, in the preceding section				·	<u> </u>



E. Classification To what extent does the textbook include discussions about:			
E. Classification To what extent does the textbook include discussions about:			
1. A historical perspective; e.g., Aristotle and Linnaeus? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	
2. Evolutionary relationships as the basis of classification? (Science Framework Addendum, pp. 20, 31; Statement, Number 8, p. 19)		x	
3. Principles of classification; e.g., hierarchy and binomial nomenclature? (Standards, Number 3, p. S-5; Statement, Number 8, p. 19)		x	
 Comparative anatomy, genetic structure (phenotypes), and biochemistry as data sets f classification? (Science Framework Addendum, p. 20; Statement, Number 8, p. 19) 	for	x	
Factual inaccuracies, if any, in the preceding section			
F. Chemistry			
To what extent does the textbook include discussions about:			
1. Atoms, molecules, chemical bonds, reactions, and the periodic table? (Science Framework Addendum, p. 24; Statement, Number 2, p. 17)	x		
 The structure and function of molecules in living things; e.g., proteins, nucleic acids, lipids, and polysaccarides? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 2, p. 17) 	x		• •
3. Energy processes; e.g., laws of thermodynamics, diffusion, osmosis, and enzyme kine (Science Framework Addendum, p. 19)	etics?	x	
Factual inaccuracies, if any, in the preceding section			
G. Cells			
To what extent does the textbook include discussions about:			
		i	
1. A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x	



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
G. C	ells—Continued					
2.	The structure and function of cells and ce!i components, including the similarities and differences between plant and animal cells? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 1, p. 17)		x			
3.	Cellular homeostasis? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)	1	1 1	X	- "	†
4.	Cellular respiration? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)			X	· · · · · · · · · · · · · · · · · · ·	
5.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9; Statement, Number 14, p. 18)			x		
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	(e. eg.			
6	Levels of organization, cells to systems? (Standards, Number 2, p. S-4; Statement, Number 3, p. 18)		x	
	Factual inaccuracies, if any, in the preceding section			
i. V	'iruses			
T	o what extent does the textbook include discussions about:		;	
1	. The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14–15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	,	(
2.	. A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		X	
3.	. The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	,		
4.	Reproduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18)		(
5.	STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			
	Factual inaccuracies, if any, in the preceding section			· · · · · · · · · · · · · · · · · · ·
M	Ionera	i	;	4
To	o what extent does the textbook include discussions about:	!	; I	
1.	The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19)	: :		
2.	A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)	X		· · · · · · · · · · · · · · · · · · ·
3.	The distinguishing structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x		



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Nos coveres
. M	onera—Continued					
4.	Reproduction? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		:	X		
5.	Diseases caused by monera; e.g., strep throat, urinary tract infections, and STDs? (Science Framework Addendum, p. 27)			X		
6.	Interrelationships with other living things and the environment; e.g., nitrogen fixation and decomposition? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			X		
7.	STIS issues; e.g., food production, waste disposal, pollution, and genetic engineering? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			X		
	Factual inaccuracies, if any, in the preceding section	 				



. P	rotists		-			
T	o what extent does the textbook include discussions about:					
1.	The evolution, the phylogeny, and taxonomy of protists? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x				
2.	Protists' structures and their functions? (Science Framework Addendum, ~ 26; Statement, Number 10, p. 19)		x			
3.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		x			
4.	Diseases caused by protists; e.g., gingivitis, dysentery, and malaria? (Science Framework Addendum, p. 27; Statement, Number 10, p. 19)		x			
5.	Interrelationships with other living things and the environment; e.g., symbiosis? (Standards, Number 4, p. S-5; Statement, Number 10, p. 19)			x		
6.	STIS issues; e.g., food sanitation, industrial products, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 10, p. 19)				x	
	Factual inaccuracies, if any, in the preceding section					
. Fı	ungi					
To	what extent does the textbook include discussions about:					1
1.	The evolution, the phylogeny, and taxonomy of fungi? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x			
2.	A historical perspective; e.g., Fleming? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)			х		1
3.	The fungal structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x			
4.	Growth and development? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			Х		



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
ζ. Fu	ngi—Continued					
5.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		x			
6.	Diseases caused by fungi; e.g., ringworm, yeast infection, athlete's foot, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5; Statement, Number 10, p. 19)			х		
7.	Interrelationships with other living things and the environment; e.g., decomposition, symbiosis (lichen), and mycorrhiza? (Standards, Number 10, p. S-8; Statement, Number 10, p. 19)			x	,	
8.	STIS issues; e.g., food (toxic mushrooms), beverages, antibiotics, and fungicides? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)			X		



	Factual inaccuracies, if any, in the preceding section				
L. P	Plants				
T	o what extent does the textbook include discussions about:				
1	. The evolution, the phylogeny, and taxonomy of plants? (Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x		
2	Plant structures and their functions; e.g., photosynthesis, food storage, and transport? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9; Statement, Number 10, p. 19)	x			
3	. Adaptations for land existence? (Science Framework Addendum, pp. 18, 22, 24; Statement, p. 16, Number 10, p. 19)			x	
4	. Growth and development, including the role of hormones? (Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		x		
5.	Propagation and reproduction, including role of pollinators? (Science Framework Addendum, p. 25; Statement, Number 5, p. 18)		x		
6.	. Response to stimuli? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8)			x	
7.	Health and disease states of plants; e.g., nutrient deficiencies and parasites? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			x	
8.	STIS issues; e.g., horticulture and environmental concerns, timber harvest, defolients, and endangered species? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)			x	
	Factual inaccuracies, if any, in the preceding section				
M. A	nimals	•			
Te	o what extent does the textbook include discussions about:				
1.	The taxonomic diversity of animals? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	x			



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covere
1. Animals—Continued					
2. Invertebrates					
To what extent does the textbook include discussions about:					
a. Invertebrate structures and their functions; e.g., systems, symmetry? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)		x			
b. Evolutionary relationships and fossil histories? (Standards, Number 15, p. S-11; Statement, p. 16, and Number 9, p. 19)			x		
c. Adaptations; e.g., for feeding and locomotion? (Standards, Number 15, p. S-11)	x		_		
d. Growth, development, and embryology? (Science Framework Addendum, pp. 30–31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)			x		
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	е.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10; Statement, Number 5, p. 18, and Number 9, p. 19)	x			
	f.	Behavior, e.g., innate versus learned, social behaviors, communication, and reproductive behaviors? (Standards, Number 5, p. S-6)			x	
	g.	Health and diseases; e.g., vectors and parasitism? (Science Framework Addendum, p. 25; Statement, Number 13, p. 20)		х		
	h.	STIS issues; e.g., agriculture, food, pests, pest control, and aquaculture? (Standards, Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 19)			x	
3	3. Ch	ordates (nonhuman)				
	To	what extent does the textbook include discussions about:				
	a .	Chordate structures and their functions; e.g., comparative anatomy and physiology and classical chordate characteristics? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8; Statement, Number 9, p. 19)	x			
	b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, pp. 15, 18; Statement, p. 16, and Number 9, p. 19)			x	
	c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, p. 30)	х			
	d.	Growth, development, and embryology? (Science Framework Addendum, p. 31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)			x	
	e.	Reproduction? (Standards, Number 13, p. S-10; Statement, Number 5, p. 18)	х			
	f.	Behavior, e.g., innate versus learned, social behaviors, or communications? (Standards, Number 5, p. S-6; Statement, Number 9, p. 19)		x		
	g.	STIS issues; e.g., wildlife management, live animals used in research, veterinary medicine, and endangered species? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 20)			x	



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—	Continued	}				
4. Vertebr	ates (Human)					!
To what e	extent does the textbook include discussions about:					1
a. Str	ucture, function, and maintenance of major body systems:					
(1)	Nervous system and sense organs?		X			! !
(2)	Circulatory system?	į	X	· · · · · · · · · · · · · · · · · · ·		
(3)	Digestive system?		X			
(4)	Respiratory system?		X	-		
(5)	Reproductive system?		X	• .,, .,	The state of the s	



(6) Musculoskeletal system?		X			
(7) Excretory system?			X		-
(8) Integumentary system?			X		-
(9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20)		x			
Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19)			x		
Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37)				x	
Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20)		x			
Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20)					
Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12)	x				
Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19)		x			
STIS issues; e.g., substance abuse? (Science Francework Addendum, p. 35)			x		
STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Framework Addendum, pp. 12–13, 31, 37; Standards, Number 16. p. S-11, and Number 17, p. S-12; Statement, Number 13 and Number 16, p. 20)			x		
Factual inaccuracies, if any, in the preceding section	†	1		.1	┷-
	(7) Excretory system? (8) Integumentary system? (9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20) Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19) Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37) Growth, development, and embryology? (Science Framework Addendum, pp. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20) Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20) Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12) Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19) STIS issues; e.g., substance abuse? (Science Franework Addendum, p. 35) STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Franework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11,	(7) Excretory system? (8) Integumentary system? (9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20) Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19) Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37) Growth, development, and embryology? (Science Framework Addendum, pp. 34; Standards, Number 7 and Number 8, p. 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(Science Framework Addendum, pp. 34–35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20) Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12) Interrelationships with other living things and the environment: e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19) X STIS issues; e.g., substance abuse? (Science Framework Addendum, p. 35) X STIS issues: e.g., genetic counseling, population and demography, environmental issues, euthanaisa, and life support systems? (Science Framework Addendum, pp. 12–13, 31, 37; Standards, Number 16, p. S-11,	(7) Excretory system? (8) Integumentary system? (9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. 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II. BIOLOGY: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- · Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

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- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- · Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating . process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.



INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- Formulating explanatory models and theorizing

INFERRING
Synthe
General
Recogn
Formul
The process The process of realizing ideas that are not directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating. problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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REVIEW OF PROCESS SKILLS

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	x				
2. Communicating?	Х				
3. Comparing?	X		_		
4. Organizing?			X		
5. Relating?				X	
6. Inferring?			X		
7. Applying?				X	

Science Framework Addendum, p. 5.



^{*}Science Framework Addendum, pp. 4-5.

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III. BIOLOGY: TEACHER'S EDITION

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To w	that extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)	x			
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)		x		
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		х		
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)			x	



5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")				x
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)				x
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	ł		x	
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)				x
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)		х		
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)				X



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IV. BIOLOGY: STUDENT'S LABORATORY MANUAL

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•	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
A. To	what extent does the student's laboratory manual include:				
	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	X			
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	X			
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	x			



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5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		x	,	
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			x	
To 1.	what extent are the following process skills taught throughout the laboratory manual:* Observing?	X			
2.	Communicating?	X			
3.	Comparing?	X			
4.	Organizing?	x			
5.	Relating?		х		
6.	Inferring?		X		-
7.	Applying?			X	

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. BIOLOGY: TEACHER'S EDITION OF THE LABORATORY MANUAL

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Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
nate of the teacher's edition of the laboratory manual include:	;		} 	
Internation that encourages the shared responsibility for safety in the science laboratory? (Science Framework Adde to 'um, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)	x			:
Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)			X	:
Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			x	
Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		··· · · · · · · · · · · · · · · · · ·	X	·
	Internation the teacher's edition of the laboratory manual include: Internation that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addition, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number, 9) Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6) Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4) Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports?	Internation that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addition, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9) Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6) Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4) Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports?	Content Con	Content emphasis emphasis emphasis emphasis emphasis emphasis emphasis emphasis emphasis internation has encourages the shared responsibility for safety in the science laboratory? (Science Framework Addite 'un, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number, 9) Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6) X Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4) Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)



5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)		x		
6.	Resource lists for acquiring: a. Equipment?	X			
	b. Chemicals?	X			
,	c. Supplies?	X			
•	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	x			
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)	x			
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)	x			
9,	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)			X	
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)			x	



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I. BIOLOGY: CONTENT (STUDENT'S EDITION)

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
A. V	Vhat is biology?					
T	o what extent does the textbook include discussions about:					
1.	The distinguishing characteristics of life; e.g., reproduction and growth? (Science Framework Addendum, p. 14)				X	
2.	Scientific reasoning; e.g., induction, deduction, observation, fact, hypothesis, theory, and inference? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1; Statement,* p. 9)			X		
3.	Research methods and tools of biologists; e.g., microscopes, centrifuge, and metric measurement? (Science Framework Addendum, pp. 23, 26, 27)		x	- · · · · · · · · · · · · · · · · · · ·	<u> </u>	
4.	Science, Technology, Individuals, and Society (STIS) issues; e.g., health, ethical concerns, careers, and economic impact? (Science Framework Addendum, p. 13; Statement, Number 13 and Number 16, p. 20)	x				aria

_	Factual inaccuracies, if any, in the preceding section:			
B.	Ecology			
	To what extent does the textbook include discussions about:			
	1. Diversity and stability in ecosystems? (Science Framework Addendum, pp. 41-42)	x	,	
	2. Biotic and otic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18)	x		
	3. Levels of ecological organization; e.g., communities, biomes, and populations? (Science Framework Addendum, pp. 39, 42; Standards, Number 4, p. S-5, and Number 16, p. S-11; Statement, Number 11, p. 19)		x	
	4. The energy flow through the ecosystem; e.g., trophic levels and energy pyramids? (Science Framework Addendum, p. 40; Statement, Number 4, p. 18, and Number 11, p. 19)		x	
	5. The impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11; Statement, Number 4, p. 18, and Number 11, p. 20)		х	
	Factual inaccuracies, if any, in the preceding section			
 C.	Heredity			
	To what extent does the textbook include discussions about:			
	1. A historical perspective; e.g., Mendel, Morgan, Sutton, Watson, and Crick? (Science Framework Addendum, p. 8; Standards, Number 12, p. S-9, and Number 14, p. S-10; Statement, p. 12)	x		

NOTE: The secondary biology textbook review instrument is correlated with the following resource documents:

^{&#}x27;See "Factual Inaccuracies" on page xii.



[.] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{• *}Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

[•] The Statement on Preparation in Natural Science Expected of Entering Freshmen is cited as Statement.

The first two documents are published by the California State Department of Education. The last one listed was issued by the Academic Senates of the California Community Colleges, the California State University, and the University of California in cooperation with the California Round Table on Educational Opportunity. Each publication is available from the California State Department of Education (see pages 403 and 404 for ordering information).

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C. H	eredity—Continued	1				
2.	Scientific tools to model heredity; e.g., probability, statistics, and pedigrees? (Science Framework Addendum, p. 20; Standards, Number 14, p. S-10)			X		
3.	Cell cycle, meiosis, and mitosis? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 5, p. 18)		X			
4.	Chromosomes, genes, DNA, and RNA? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)		x	· · · · · · · · · · · · · · · · · · ·		
5.	Biochemical aspects of heredity; e.g., transcription, translation, and protein synthesis? (Science Framework Addendum, p. 19; Statement, Number 7, p. 18)			х	-	



6.	Gene and chromosome mutations; e.g., inversions, insertions, and nonsense codons? (Science Framework Addendum, p. 19; Standards, Number 12, p. S-9; Statement, Number 7, p. 18)		x		,
7.	Human genetic variability; e.g., color blindness, baldness, and blood groups? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10; Statement, Number 7, p. 18)		х		
8.	The influence of heredity on health and disease; e.g., sickle-cell anemia, hemophilia, and Down's syndrome? (Standards, Number 12, p. S-9; Statement, Number 13, p. 20)		x		
9.	STIS issues; e.g., selective breeding and techniques and ethics of genetic engineering? (Science Framework Addendum, pp. 19–20; Statement, Number 5, p. 18, and Number 13, p. 20)			x	
	Factual inaccuracies, if any, in the preceding section				
	volution				
1.	what extent does the textbook include discussions about: The genetic basis of evolution; e.g., genes as the source of variation? (Standards, Number 15, p. S-11; Statement, Number 6, p. 18)			x	
2.	A historical perspective; e.g., works of Lamarck, Wallace, and Darwin? (Science Framework Addendum, p. 8; Standards, p. S-1, and Number 15, p. S-11; Statement, p. 12, and Number 6, p. 18)		x		
3.	Scientific evidence; e.g., paleontology, genetics, biochemistry, and comparative anatomy? (Science Framework Addendum, pp. 20, 31; Statement, Number 6, p. 18)	x			
4.	Fossil evidence for evolution; e.g., skeletons, pollen, dating methods, and sequence of fossil forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)	x			
5.	Evolutionary processes and their effects; e.g., selection, drift, adaptation, speciation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)		x		



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D. E	volution—Continued					
6.	Scientific theories about the origin of life; e.g., inorganic to organic? (Science Framework Addendum, p. 24; Statement, Number 6, p. 18)			x		
7.	The history of life on earth; e.g., evolution from unicellular to multicellular and more specialized forms? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11; Statement, Number 6, p. 18)			x		
8.	Human evolution; e.g., paleoanthropology and the work on "Lucy"? (Science Framework Addendum, p. 35; Statement, Number 6, p. 18)				х	
حو	Factual inaccuracies, if any, in the preceding section		 			1



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E.	Classification					· ·
	To what extent does the textbook include discussions about:					
_	1. A historical perspective; e.g., Aristotle and Linnaeus? (Science Framework Aadendum, p. 8; Standards, p. S-1; Statement, p. 12)				x	
	2. Evolutionary relationships as the basis of classification? (Science Framework Addendum, pp. 20, 31; Statement, Number 8, p. 19)		х			
	3. Principles of classification; e.g., hierarchy and binomial nomenclature? (Standards, Number 3, p. S-5; Statement, Number 8, p. 19)	x				
	 Comparative anatomy, genetic structure (phenotypes), and biochemistry as data sets for classification? (Science Framework Addendum, p. 20; Statement, Number 8, p. 19) 	x				
	Factual inaccuracies, if any, in the preceding section					
F.	Chemistry To what extent does the textbook include discussions about: 1. Atoms, molecules, chemical bonds, reactions, and the periodic table?					
	(Science Framework Addendum, p. 24; Statement, Number 2, p. 17)			x		
	 The structure and function (molecules in living things; e.g., proteins, nucleic acids, lipids, and polysaccarides? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 2, p. 17) 	x				
	3. Energy processes; e.g., laws of thermodynamics, diffusion, osmosis, and enzyme kinetics? (Science Framework Addendum, p. 19)	x				
	Factual inaccuracies, if any, in the preceding section					
G.	Cells					1
	To what extent does the textbook include discussions about: 1. A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow?					



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G. C	ells—Continued					
2.	The structure and function of cells and cell components, including the similarities and differences between plant and animal cells? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4; Statement, Number 1, p. 17)	x				
3.	Cellular homeostasis? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)			х		
4.	Cellular respiration? (Standards, Number 1, p. S-4; Statement, Number 4, p. 18)			x		
5.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9; Statement, Number 14, p. 18)			x		



6	Levels of organization, cells to systems? (Standards, Number 2, p. S-4; Statement, Number 3, p. 18)	x	
	Factual inaccuracies, if any, in the preceding section		
H. V	/iruses		
T	o what extent does the textbook include discussions about:		
1	. The taxonomy of viruses; e.g., rhinoviruses, herpes simplex, and retroviruses? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)		x
2	A historical perspective; e.g., tobacco mosaic virus, polio, Jenner, or Pasteur? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)	x	
3	. The viral structures and their functions? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	x	
4.	. Rep.oduction; e.g., invasion? (Science Framework Addendum, p. 27; Statement, Number 5, p. 18)	x	
5.	. STIS issues: nature of viral diseases and their social and economic impact; e.g., AIDS, influenza, and German measles? (Science Framework Addendum, p. 27; Standards, Number 17, ρ. S-12; Statement, Number 10, p. 19)	x	
	Factual inaccuracies, if any, in the preceding section		
. M	Ionera		
T	o what extent does the textbook include discussions about:		
1.	The evolution, the phylogeny, and taxonomy of monera? (Science Framework Addendum, pp. 15, 18; Statement, Number 10, p. 19)	x	
2.	A historical perspective; e.g., Pasteur or Koch? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		x
3.	The distinguishing structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x	



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I. R	Monera—Continued					
	Reproduction? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			x		
5	Diseases caused by monera; e.g., strep throat, urinary tract infections, and STDs? (Science Framework Addendum, p. 27)			х		
6	Interrelationships with other living things and the environment; e.g., nitrogen fixation and decomposition? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)		x			
7	STIS issues; e.g., food production, waste disposal, pollution, and genetic engineering? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12; Statement, Number 10, p. 19)		x			
	Factual inaccuracies, if any, in the preceding section					_



T 10	rotists				
• -	o what extent does the textbook include discussions about:				
1	The evolution, the phylogen, and taxonomy of protists? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		x		
2	. Protists' structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)	x			
3	. Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		x		
4	Diseases caused by protists; e.g., gingivitis, dysentery, and malaria? (Science Framework Addendum, p. 27; Statement, Number 10, p. 19)		х		
5	. Interrelationships with other living things and the environment; e.g., symbiosis? (Standards, Number 4, p. S-5; Statement, Number 10, p. 19)		x		•
6	STIS issues; e.g., food sanitation, industrial products, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 10, p. 19)			x	
	Factual inaccuracies, if any, in the preceding section				
K. F	ungi				
T	o what extent does the textbook include discussions about:				
1	The evolution, the phylogeny, and taxonomy of fungi? (Science Framework Addendum, pp. 14–15; Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	x			
2	A historical perspective; e.g., Fleming? (Science Framework Addendum, p. 8; Standards, p. S-1; Statement, p. 12)		х		
3	The fungal structures and their functions? (Science Framework Addendum, p. 26; Statement, Number 10, p. 19)		х		****
4	Growth and development? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)		X		



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	Consens	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
K. Fu	ingiContinued					
5.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 26; Statement, Number 5, p. 18)			x		
6.	Diseases caused by fungi; e.g., ringworm, yeast infection, athlete's foot, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5; Statement, Number 10, p. 19)			x		
7.	Interrelationships with other living things and the environment; e.g., decomposition, symbiosis (lichen), and mycorriza? (Standards, Number 10, p. S-8; Statement, Number 10, p. 19)			x		
8.	STIS issues; e.g., food (toxic mushrooms), beverages, antibiotics, and fungicides? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12; Statemerit, Number 10, p. 19)		X			

		1	1	
Factual inaccuracies, if any, in the preceding section				
L. Plants				
To what extent does the textbook include discussions about:				
1. The evolution, the phylogeny, and taxonomy of plants? (Standards, Number 3, p. S-5; Statement, Number 10, p. 19)	x			
 Plant structures and their functions; e.g., photosynthesis, food storage, and transport? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9; Statement, Number 10, p. 19) 	x			
3. Adaptations for land existence? (Science Framework Addendum, pp. 18, 22, 24; Statement, p. 16, Number 10, p. 19)		x		
4. Growth and development, including the role of hormones? (Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	x			
5. Propagation and reproduction, including role of pollinators? (Science Framework Addendum, p. 25; Statement, Number 5, p. 18)	х			-
6. Response to stimuli? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8)			x	
7. Health and disease states of plants; e.g., nutrient deficiencies and parasites? (Science Framework Addendum, p. 25; Statement, Number 10, p. 19)			х	
8. STIS issues; e.g., horticulture and environmental concerns, timber harvest, defolients, and endangered species? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)		X		
Factual inaccuracies, if any, in the preceding section				
M. Animals				
To what extent does the textbook include discussions about:	1			
1. The taxonomic diversity of animals?				
(Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	X			



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M. Anin	Animals—Continued					
2. Ir	nvertebrates					
T	o what extent does the textbook include discussions about:					
a .	Invertebrate structures and their functions; e.g., systems, symmetry? (Science Framework Addendum, p. 29; Statement, Number 9, p. 19)	x				
b.	Evolutionary relationships and fossil histories? (Standards, Number 15, p. S-11; Statement, p. 16, and Number 9, p. 19)		х			
c.	Adaptations; e.g., for feeding and locomotion? (Standards, Number 15, p. S-11)		х			
d.	Growth, development, and embryology? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)		x			



	e.	Reproduction; e.g., asexual and sexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10; Statement, Number 5, p. 18, and Number 9, p. 19)	x		
	f.	Behavior, e.g., innate versus learned, social behaviors, communication, and reproductive behaviors? (Standards, Number 5, p. S-6)	x		
	g.	Health and diseases; e.g., vectors and parasitism? (Science Framework Addendum, p. 25; Statement, Number 13, p. 20)		х	
		STIS issues; e.g., agriculture, food, pests, pest control, and aquaculture? (Standards, Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 19)		х	
3.	Ch	ordates (nonhuman)			
	To	what extent does the textbook include discussions about:			
	a.	Chordate structures and their functions; e.g., comparative anatomy and physiology and classical chordate characteristics? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8; Statement, Number 9, p. 19)	x		
	b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, pp. 15, 18; Statement, p. 16, and Number 9, p. 19)	X		
	c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, p. 30)	х		
	d.	Growth, development, and embryology? (Science Framework Addendum, p. 31; Standards, Number 9, p. S-8, and Number 13, p. S-10; Statement, Number 5, p. 18)	x		
	e.	Reproduction? (Standards, Number 13, p. S-10; Statement, Number 5, p. 18)	x		
÷(17.4)	f.	Behavior, e.g., innate versus learned, social behaviors, or communications? (Standards, Number 5, p. S-6; Statement, Number 9, p. 19)	x		
	g.	STIS issues; e.g., wildlife management, live animals used in research, veterinary medicine, and endangered species? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 5, p. 18, and Number 11, p. 20)		x	



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M. Animals—Continued					
4. Vertebrates (Human)					
To what extent does the textbook include discussions about:					
a. Structure, function, and maintenance of major body systems:					
(1) Nervous system and sense organs?		1 5	x		
(2) Circulatory system?			X		
(3) Digestive system?			X		
(4) Respiratory system?			X		
(5) Reproductive system?			X		
485					4.5



	(6) Musculoskeletal system?			X	
	(7) Excretory system?			X	
	(8) Integumentary system?			x	
	(9) The endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7; Statement, Number 9, p. 19, and Number 12, p. 20)			x	
b.	Evolutionary relationships and fossil histories? (Science Framework Addendum, p. 35; Statement, p. 16, and Number 9, p. 19)			x	
c.	Adaptations; e.g., for feeding and locomotion? (Science Framework Addendum, pp. 32, 33, 35, 37)	x			
d.	Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7; Statement, Number 12, p. 20)		x		
e.	Behavior, e.g., innate versus learned, social behaviors, and communication? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6; Statement, Number 12, p. 20)			x	
f.	Health, diseases, and immunity; e.g., genetic, communicable, degenerative, cancer, diagnostic instruments, and STDs? (Science Framework Addendum, p. 35; Standards, Number 17, p. S-12)	x			
g.	Interrelationships with other living things and the environment; e.g., domestication of plants and animals or habitat destruction? (Standards, Number 4, p. S-5; Statement, Number 11, p. 19)		x		
h.	STIS issues; e.g., substance abuse? (Science Framework Addendum, p. 35)				x
i.	STIS issues; e.g., genetic counseling, population and demography, environmental issues, euthanasia, and life support systems? (Science Framework Addendum, pp. 12–13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12; Statement, Number 13 and Number 16, p. 20)			x	
	Factual inaccuracies, if any, in the preceding section		1	<u></u>	<u> </u>



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II. BIOLOGY: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.





INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- · Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

DEFINITION OF TERMS

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REVIEW OF PROCESS SKILLS'					
To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	. 1	Limited emphasis	Not covered
1. Observing?	x	:			
2. Communicating?	X	• ···· · · · · · · · · · · · · · · · ·	en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de	····· -	· · -
3. Comparing?	X	• • •	· · · · · · · · · · · · · · · · · · ·		*
4. Organizing?	*	X	· ·	- /•	•
5. Relating?	÷	X	· · · · · · · · · · · · · · · ·		• · · · · · · · · · · · · · · · · · · ·
6. Inferring?		X	e e e e e e e e e e e e e e e e e e e		• ·
7. Applying?	•	•	X .	<u>. </u>	
the American Control of the Control					

Science Framework Addendum, p. 5.



^{*}Science Framework Addendum, pp. 4-5.

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III. BIOLOGY: TEACHER'S EDITION

DEFINITION OF TERMS

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)			x	
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	x			
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)				x
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)	x			



5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")			x
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)		x	_
7.	Instructional activities that integrate knowledge and skills learned in c_er disciplines; e.g., mathematics or history? (Science Framework Addendur:, p. 104, "Content and Process," Number 5)	x		
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)		x	
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	x		· · ·
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)	x		



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IV. BIOLOGY: STUDENT'S LABORATORY MANUAL

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	Content	•	High emphasis	Moderate emphasis	Limited er rhasis	Not coveres
4. То	what extent does the student's laboratory manual include:	***				
1.	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)		x			
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experience of the setup. (Science Framework Addendum, p. 104, "Content and Process," Number 8)	eriences?	x			
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)		x			
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading as (Science Framework Addendum, p. 104, "Content and Process," Number 5)	nd writing?		x		



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5.	Assignments that g lide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	x			
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			х	
То	what extent are the following process skills taught throughout the laboratory manual:*				
1.	Observing?	x			
2.	Communicating?	Х			
3.	Comparing?	x			
4.	Organizing?		x		
5.	Relating?		X		
6.	Inferring?		х		
7.	Applying?				X

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. BIOLOGY: TEACHER'S EDITION OF THE LABORATORY MANUAL

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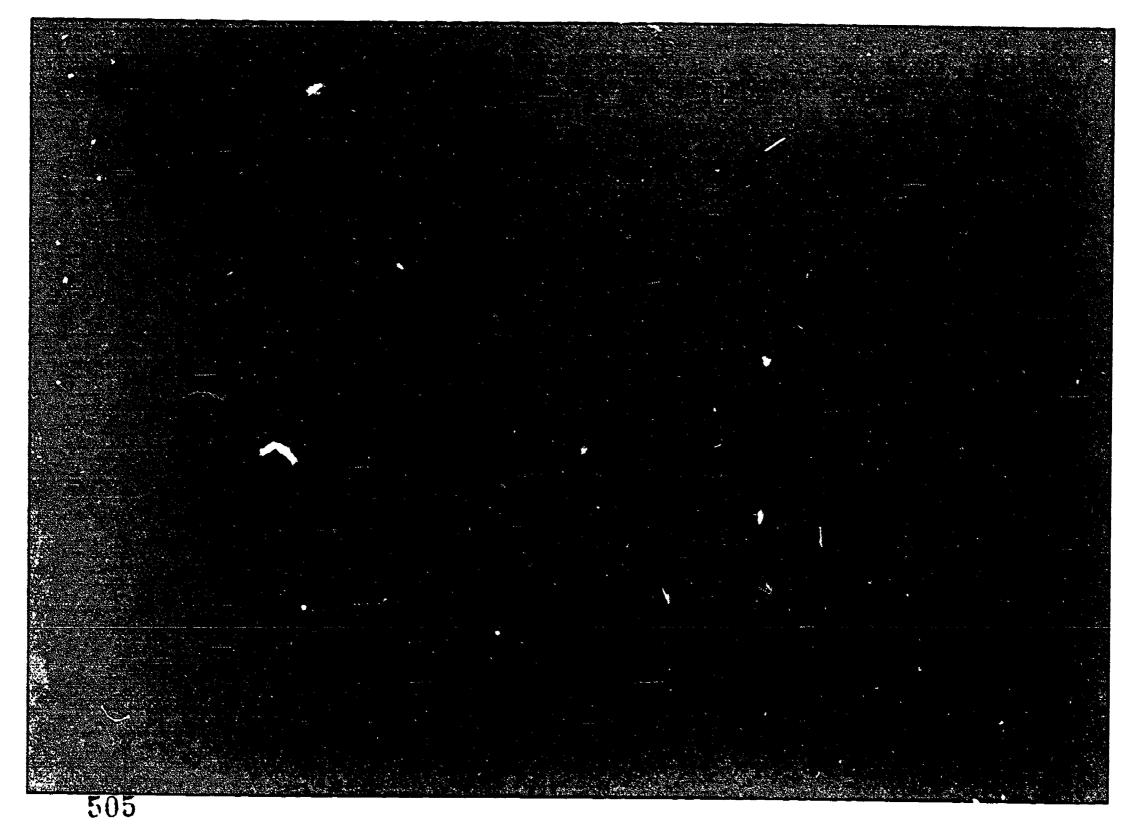
	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)	x			
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)				x
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		х		
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)			x	



. 12.

5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)				x
6.	Resource lists for acquiring:				
	a. Equipment?	x			
	b. Chemicals?	x			
	c. Supplies?	X			
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	x			
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)	x			
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				x
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)			х	
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)		x		







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I. LIFE SCIENCE: CONTENT (STUDENT'S EDITION)

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		Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
١. :	Nat	ture of Science					
•	То	what extent does the textbook include discussions about:					
	1.	The characteristics of living things; e.g., reproduction and growth? (Science Framework Addendum, p. 14)			x		
3	2.	The "scientific method"; e.g., observation, hypothesis, and experimentation? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1)			х		
		Science, Technology, Individuals, and Society (STIS) issues: life science in everyday life; e.g., health, ethical concerns, and careers? (Science Framework Addendum, p. 13)				x	
•	·	Factual inaccuracies, if any, in the preceding section		1	<u> </u>	<u> </u>	



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B.	Ec	cology		_	
	То	what extent does the textbook include discussions about:			
	1.	Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)	x		
	2.	Levels of ecological organization; e.g., populations, communities, and biomes? (Science Framework Addendum, p. 39; Standards, Number 4, p. S-5, and Number 16, p. S-11)	·	x	
	3.	Structure of and energy flow through the ecosystem; e.g., producers, consumers, decomposers, and energy pyramids? (Science Framework Addendum, p. 40)		x	
	4.	STIS issues: conservation and the impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)	¥		
		Factual inaccuracies, if any, in the preceding section			
C.	He	eredity			
	То	what extent does the textbook include discussions about:			
	1.	Mendelian genetics? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10)	x		
	2.	The concept of passing of genetic traits from parent to offspring; e.g., family pedigree? (Standards, Number 14, p. S-10)	х		
	3.	Genetic diseases; e.g., hemophilia, Down's syndrome, cystic fibrosis, or sickle-cell anemia? (Standards, Number 12, p. S-9)		x	

NOTE: The secondary life science textbook review instrument is correlated with the following resource documents:

-4.

[•] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twe've is cited as Science Framework Addendum.

^{• *}Mode: Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

These documents are published by the California State Department of Education. (See pages 403 and 404 for ordering information).

^{&#}x27;A factual inaccuracy was noted in this section. The publisher has given assurances that the inaccuracy will be corrected in the next edition of this book. For more information see "Factual Inaccuracies" on page xii.

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			+	3
	1			
			x	
;				
	x			
			X	
_		X	X	



3.	The mechanisms of evolution; e.g., mutation, selection, speciation, adaptation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)	x		
	Factual inaccuracies, if any, in the preceding section			
. C	lassification			
T	o what extent does the textbook include discussions about:			
1.	The historical development of systems of classification; e.g., Aristotle and Linnaeus? (Standards, p. S-1, Number 3, p. S-5)		x	
2.	Identification and description of the five kingdom system of classifying living things? (Science Framework Addendum, p. 14)			x
	Factual inaccuracies, if any, in the preceding section			
. E	nergy Processes			
1	To what extent does the textbook include discussions about:			
1.	The chemical basis of life; e.g., atoms, molecules, bonds, and reactions? (Science Framework Addendum, p. 24)	x		
2.	Human nutrition as related to everyday diet; e.g., food, vitamins, water, and minerals? (Science Framework Addendum, pp. 34-35; Standards, Number 8, p. S-7)	x		
3.	Cellular respiration? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4, and Number 4, p. S-5)	x		
4.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9)	x		
5.	The conversion of matter and energy as it applies to living systems; e.g., conservation of energy and matter? (Science Framework Addendum, p. 24; Standards, Number 1, p. S-4)		x	
	Factual inaccuracies, if any, in the preceding section		1	



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
G. C	ells, Tissues, Organs, and Organ Systems					
T	what extent does the textbook include discussions about:					
1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Standards, Number 12, Activity Number 3, p. S-9)			x		
2.	The structures and functions of cells and cell components, including the similarities and differences between plant and animal cells? (Standards, Number 1, p. S-4, and Number 12, p. S-9)			x		
3.	The cell cycle, including mitosis and meiosis? (Standards, Number 12, p. S-9)			x		
4.	The structure and function of DNA and RNA in cell replication and in the reproduction of organisms? (Standards, Number 12, p. S-9)			х		



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5. The interrelationships among cells, tissues, organs, and organ systems within multicellular organisms?			
(Standards, Number 2, p. S-4)		x	
Factual inaccuracies, if any, in the preceding section			
H. Viruses			
To what extent does the textbook include discussions about:			
1. Characteristics of viruses? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5)			x
2. Reproduction of viruses?			
(Science Framework Addendum, p. 27)			
3. Human diseases which involve viral pathogens?			
(Science Framework Addendum, p. 27; Standards, Number 17, p. S-12)			X
Factual inaccuracies, if any, in the preceding section			
I. Monera			
To what extent does the textbook include discussions about:			
1. The major groups of monera? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5)		x	
2. The types of diseases produced by certain monera? (Science Framework Addendum, p. 27)	x		
3. Reproduction in monera? (Science Framework Addendum, p. 26)		x	
4. STIS issues; e.g., food production, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)			X



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covere
J.	Protists					
	To what extent does the textbook include discussions about:					
	1. The major groups of protists? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)			X		
	2. Diseases caused by protists? (Science Framework Addendum, p. 27)			x		
	3. Reproduction in protists? (Science Framework Addendum, p. 26)			x		
	4. STIS issues; e.g., food production, waste disposal, industrial products, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)					x



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Factual inaccuracies, if any, in the preceding section				
ıngi				
what extent does the textbook include discussions about:		İ		
The major groups of fungi?				
(Science Framework Addendum, pp. 14-15, 27; Standards, Number 3, p. S-5)		X		
Diseases caused by fungi; e.g., athlete's foot, ringworm, yeast infection, smuts, and				
(Science Framework Addendum, p. 21; Standards, Number 4, p. S-5)			X	
Asexual and sexual reproduction in fungi?				
(Science Framework Addendum, p. 26)		X		
STIS issues; e.g., food (toxic mushrooms), beverages, or antibiotics?				
(Science Framework Addendum, p. 26; Standards, Number 17, p. S-12)		x		
Factual inaccuracies, if any, in the preceding section				
ants				
what extent does the textbook include discussions about:				
Classification of plants into groups?				
(Standards, Number 4, p. S-5)			X	
The structures and the functions of the parts of plants?				
(Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11,				
p. S-9)	X			
Response to stimuli?				
(Science Framework Addendum, p. 24)		X		į
Plant adaptations?				
(Science Framework Addendum, pp. 18, 22, and 24)			x	
Asexual and sexual reproduction in plants?				
(Standards, Number 13, p. S-10)	x			
	what extent does the textbook include discussions about: The major groups of fungi? (Science Framework Addendum, pp. 14-15, 27; Standards, Number 3, p. S-5) Diseases caused by fungi; e.g., athlete's foot, ringworm, yeast infection, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5) Asexual and sexual reproduction in fungi? (Science Framework Addendum, p. 26) STIS issues; e.g., food (toxic mushrooms), beverages, or antibiotics? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12) Factual inaccuracies, if any, in the preceding section ants what extent does the textbook include discussions about: Classification of plants into groups? (Standards, Number 4, p. S-5) The structures and the functions of the parts of plants? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9) Response to stimuli? (Science Framework Addendum, p. 18, 22, and 24) Asexual and sexual reproduction in plants?	Ingl what extent does the textbook include discussions about: The major groups of fungi? (Science Framework Addendum, pp. 14–15, 27; Standards, Number 3, p. S-5) Diseases caused by fungi; e.g., athlete's foot, ringworm, yeast infection, smuts, and nusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5) Asexual and sexual reproduction in fungi? (Science Framework Addendum, p. 26) STIS issues; e.g., food (toxic mushrooms), beverages, or antioiotics? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12) Factual inaccuracies, if any, in the preceding section ants what extent does the textbook include discussions about: Classification of plants into groups? (Standards, Number 4, p. S-5) The structures and the functions of the parts of plants? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9) Response to stimuli? (Science Framework Addendum, p. 24) Plant adaptations? (Science Framework Addendum, pp. 18, 22, and 24) Asexual and sexual reproduction in plants?	Ingl what extent does the textbook include discussions about: The major groups of fungi? Science Framework Addendum, pp. 14–15. 27; Standards, Number 3, p. S-5) X Diseases caused by fungi; e.g., athlete's foot, ringworm, yeast infection, smuts, and nusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5) Asexual and sexual reproduction in fungi? (Science Framework Addendum, p. 26) X STIS Issues; e.g., food (toxic mushrooms), beverages, or antioiotics? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12) X Factual inaccuracies, if any, in the preceding section ants what extent does the textbook include discussions about: Classification of plants into groups? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9) The structures and the functions of the parts of plants? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9) Plant adaptations? (Science Framework Addendum, pp. 18, 22, and 24) Asexual and sexual reproduction in plants?	Ingi what extent does the textbook include discussions about: The major groups of fungi? (Science Framework Addendum, pp. 14–15, 27; Standards, Number 3, p. S-5) X Diseases caused by fungi; e.g., athlete's foot, ringworm, yeast infection, smuts, and nusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5) X Asexual and sexual reproduction in fungi? (Science Framework Addendum, p. 26) STIS issues; e.g., food (toxic mushrooms), beverages, or antioiotics? (Science Framework Addendum, p. 26, Standards, Number 17, p. S-12) X Factual inaccuracies, if any, in the preceding section ants what extent does the textbook include discussions about: Classification of plants into groups? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9) The structures and the functions of the parts of plants? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9) Response to stimuli? (Science Framework Addendum, p. 24) Y Asexual and sexual reproduction in plants?



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
L. Plants—Continued					1
 STIS issues; e.g., the useful applications of plants and plant products? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12) 			· x		
Factual inaccuracies, if any, in the preceding section					
M. Animals	•				
To what extent does the textbook include discussions about:					
1. Invertebrates					
a. Descriptions of the major phyla; e.g., porifera, coelenterates, worms, mollusks, echinoderms, and arthropods? (Science Framework Addendum, pp. 29-30)				v	
a. Descriptions of the major phyla; e.g., porifera, coelenterates, worms, mollusks, echinoderms, and arthropods? (Science Framework Addendum, pp. 29-30)				X	



			1		 -
	Structure and function of organs and systems? (Science Framework Addendum, pp. 28–29)	x			
	Crowth and development? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10)				
	I. Reproduction, including sexual and asexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10)		х		
!	e. Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-6)			х	
	STIS issues; e.g., agriculture, food, pests, and aquaculture? (Standards, Number 17, p. S-12)			х	
2.	Vertebrates (Nonhuman)				
i	Description of major classes of chordates; e.g., fish, amphibians, reptiles, birds, and mammals? (Science Framework Addendum, p. 29)			x	
Ì	Structure and functions of organs and systems? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8)		x		
	Crowth, development, and embryology? (Science Framework Addendum, p. 31)	х			
(l. Sexual reproduction? (Standards, Number 13, p. S-10)	х			
1	e. Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-10)		x		
	STIS issues: e.g., wildlife management? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12)		x		



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued					
3. Vertebrates (Human)					
a. Structure, function, and maintenance of major body systems:					
(1) Nervous system and sense organs?		x			
(2) Circulatory system?		х			
(3) Digestive system?		X			
(4) Respiratory system?				Х	
(5) Reproductive system?			X		
(6) Musculoskeletal system?				X	



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(7) Excretory system?		x		
(8) Integumentary system?		X		
(9) Endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7)	х			
b. Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7)		x		
c. Behavior, e.g., innate compared with learned? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6)		x		
d. Transmission, symptoms, and prevention of STDs? (Standards, Number 17, p. S-12)			x	
e. STIS issues; e.g., genetic counseling, noncommunicable diseases, environmental issues, and substance abuse? (Science Framework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12)				x
• Factual inaccuracies, if any, in the preceding section*				

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II. LIFE SCIENCE: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- · Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.



INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- · Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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REVIEW OF PROCESS SKILLS'

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	x			-	
2. Communicating?		X			
3. Comparing?	X				
4. Organizing?			X		
5. Relating?		-		X	
6. Inferring?					X
7. Applying?					X

Science Framework Addendum, p. 5. 533



^{*}Science Framework Addendum, pp. 4-5.

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III. LIFE SCIENCE: TEACHER'S EDITION

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)			<	
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)			x	
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			X	
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)			x	



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5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")		x	
6.	*Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)			x
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)			x
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)			x
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	х		
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)			x



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IV. LIFE SCIENCE: STUDENT'S LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
. T	what extent does the student's laboratory manual include:				
	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	х			
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)			<u></u>	X
4.	Assignments that integrate knowledge and ski!'s learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x	4.4	







5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			x	
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				х
3. To	what extent are the following process skills taught throughout the laboratory manual:*				
1.	Observing?	x			
2.	Communicating?	X			
3.	Comparing?	x			
4.	Organizing?	x			
5.	Relating?		X		
6.	Inferring?		-		X
7.	Applying?				X

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7,



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V. LIFE SCIENCE: TEACHER'S EDITION OF THE LABORATORY MANUAL

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To v	what extent does the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)		x		
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)				x
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			х	
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)			х	



5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)			x	
б.	Resource lists for acquiring:				<u> </u>
	a. Equipment?	x			
	b. Chemicals?			х	
	c. Supplies?		X		
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)		х		
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104–105, "Teachers' Materials," Number 2)				x
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				x
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)			x	
0.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)				x



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I. LIFE SCIENCE: CONTENT (STUDENT'S EDITION)

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
. N	ature of Science					
T	o what extent does the textbook include discussions about:					
1.	The characteristics of living things; e.g., reproduction and growth? (Science Framework Addendum, p. 14)			x		
2.	The "scientific method"; e.g., observation, hypothesis, and experimentation? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1)		х			
3.	Science, Technology, Individuals, and Society (STIS) issues: life science in everyday life; e.g., health, ethical concerns, and careers? (Science Framework Addendum, p. 13)			x		
	Factual inaccuracies, if any, in the preceding section [†]					1



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B.	Ecology			
	To what extent does the textbook include discussions about:			
	1. Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)	x		
	2. Levels of ecological organization; e.g., populations, communities, and biomes? (Science Framework Addendum, p. 39; Standards, Number 4, p. S-5, and Number 16, p. S-11)	x		
	3. Structure of and energy flow through the ecosystem; e.g., producers, consumers, decomposers, and energy pyramids? (Science Framework Addendum, p. 40)	x		
	4. STIS issues: conservation and the impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)	x		
	Factual inaccuracies, if any, in the preceding section			
c.	Heredity			
	To what extent de subject textbook include discussions about:			
	1. Mendelian g. 193387 (Science Francisco de decendum, p. 17; Standards, Number 14, p. S-10)	x		
	2. The concept of persing of genetic traits from parent to offspring; e.g., family pedigree? (Standards, Number 14, p. S-10)	x		
	3. Genetic diseases; e.g., hemophilia, Down's syndrome, cystic fibrosis, or sickle-cell anemia? (Standards, Number 12, p. S-9)		X	

NOTE: The secondary life science textbook review instrument is correlated with the following resource documents:

· *Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

These documents are published by the California State Department of Education. (See pages 403 and 404 for ordering information).

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[·] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{&#}x27;A factual inaccuracy was noted in this section. The publisher has given assurances that the inaccuracy will be corrected in the next edition of this book. For more information see "Factual Inaccuracies" on page xii.

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C. Heredity—Continued					
4. STIS issues; e.g., the benefits and problems of genetic engineering? (Science Framework Addendum, pp. 19-20)			X		
— Factual inaccuracies, if any, in the preceding section					
D. Evolution					
To what extent does the textbook include discussions about:					
 The factual basis for evolution; e.g., anatomical evidence and fossil records? (Standards, Number 15, p. S-11) 			x		
2. Human evolution? (Science Framework Addendum, p. 35)					x
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						•
3.	The mechanisms of evolution; e.g., mutation, selection, speciation, adaptation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)			x		
•	Factual inaccuracies, if any, in the preceding section*					
. C l	lassification					
To	what extent does the textbook include discussions about:					1
1.	The historical development of systems of classification; e.g., Aristotle and Linnaeus? (Standards, p. S-1, Number 3, p. S-5)				x	
2.	Identification and description of the five kingdom system of classifying living things? (Science Framework Addendum, p. 14)			x		
	Factual inaccuracies, if any, in the preceding section					
. Ei	nergy Processes			444		
T	o what extent does the textbook include discussions about:					
1.	The chemical basis of life; e.g., atoms, molecules, bonds, and reactions? (Science Framework Addendum, p. 24)				x	
2.	Human nutrition as related to everyday diet; e.g., food, vitamins, water, and minerals? (Science Framework Addendum, pp. 34-35; Standards, Number 8, p. S-7)		x			
3.	Cellular respiration? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4, and Number 4, p. S-5)				x	
4.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9)			x		
5.	energy and matter?					
	(Science Framework Addendum, p. 24; Standards, Number 1, p. S-4)				X	
	Factual inaccuracies, if any, in the preceding section			·		·

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G. C	ells, Tissues, Organs, and Organ Systems					
Te	what extent does the textbook include discussions about:					
1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Standards, Number 12, Activity Number 3, p. S-9)			x		
2.	The structures and functions of cells and cc11 components, including the similarities and differences between plant and animal cells? (Standards, Number 1, p. S-4, and Number 12, p. S-9)			X		
3.	The cell cycle, including mitosis and meiosis? (Standards, Number 12, p. S-9)			X		
4.	The structure and function of DNA and RNA in cell replication and in the reproduction of organisms? (Standards, Number 12, p. S-9)			x		



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5.	. The interrelationships among cells, tissues, organs, and organ systems within multicellular organisms? (Standards, Number 2, p. S-4)	x		,
	Factual inaccuracies, if any, in the preceding section			
. v	'iruses			
T	o what extent does the textbook include discussions about:			
1.	. Characteristics of viruses? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5)	x		
2.	. Reproduction of viruses? (Science Framework Addendum, p. 27)		х	
3.	. Human diseases which involve viral pathogens? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12)		x	
	Factual inaccuracies, if any, in the preceding section			
M	Ionera			
T	o what extent does the extbook include discussions about:			
1.	. The major groups of monera? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5,	x		
2.	The types of diseases produced by certain monera? (Science Framework Addendum, p. 27)	x		
3.	Reproduction in monera? (Science Framework Addendum, p. 26)		х	
4.	STIS issues; e.g., food production, waste disposal, and pollution? (Science * mework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)	х		
	Factual inaccuracies, if any, in the preceding section	 		



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covere
	Protists					
•	To what extent does the textbook include discussions about:					
	1. The major groups of protists? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)			X .		
	2. Diseases caused by protists? (Science Framework Addendum, p. 27)				x	
	3. Reproduction in protists? (Science Framework Addendum, p. 26)				X	
•	4. STIS issues; e.g., food production, waste disposal, industrial products, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)			,	X	



Fact	tual inaccuracies, if any, in the preceding section				
K. Fungi					
To what	t extent does the textbook include discussions about:				
	major groups of fungi?		-		
(Sci	ience Framework Addendum, pp. 14-15, 27; Standards, Number 3, p. S-5)		X		
rust					
(Sci	ence Framework Addendum, p. 27; Standards, Number 4, p. S-5)				X
3. Ase	xual and sexual reproduction in fungi?				
(Sci	ence Framework Addendum, p. 26)		' x		
4. STI	S issues; e.g., food (toxic mushrooms), beverages, or antibiotics?				
(Sci	ience Framework Addendum, p. 26; Standards, Number 17, p. S-12)		X		
Fact	tual inaccuracies, if any, in the preceding section				
L. Plants					
To what	t extent does the textbook include discussions about:				
	ssification of plants into groups? undards, Number 4, p. S-5)	x			
	structures and the functions of the parts of plants?				
	ence Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11,	v			
p. \$		X			
	ponse to stimuli?				
(30)	ence Framework Addendum, p. 24)			X	
	nt adaptations?				
(Sci	ence Framework Addendum, pp. 18, 22, and 24)	X			
	xual and sexual reproduction in plants?				
(Sta	andards, Number 13, p. S-10)	x			



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High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
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	emphasis	emphasis emphasis	emphasis emphasis emphasis	emphasis emphasis emphasis X



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b.					
	(Science Framework Addendum, pp. 28–29)	X			
с.	Growth and development? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10)			x	
d.	Reproduction, including sexual and asexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10)	x			
e.	Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-6)			x	
f.	STIS issues; e.g., agriculture, food, pests, and aquaculture? (Standards, Number 17, p. S-12)		x		
2. Ve	ertebrates (Nonhuman)				
a.	Description of major classes of chordates; e.g., fish, amphibians, reptiles, birds, and mammals? (Science Framework Addendum, p. 29)		x		
b.	Structure and functions of organs and systems? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8)			x	
c.	Growth, development, and embryclogy? (Science Framework Addendum, p. 31)			x	
d.	Sexual reproduction? (Standards, Number 13, p. S-10)			х	
e.	Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-10)		x		
f.	STIS issues; e.g., wildlife management? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12)		X		



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued					
3. Vertebrates (Human)					
a. Structure, function, and maintenance of major body systems:					
(1) Nervous system and sense organs?		x			
(2) Circulatory system?		x			
(3) Digestive system?		X	_,		
(4) Respiratory system?		X			
(5) Reproductive system?			x		
(6) Musculoskeletal system?		X			
567		i			Unio



(7) Excretory system?		x
(8) Integumentary system?		X
(9) Endocrine system? (Science Framework Addendum, p. 33; Standards, Nur	mber 7, p. S-7)	x
b. Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number	r 7 and Number 8, p. S-7)	x
c. balavior; e.g., innate compared with learned? (Science Framework Addendum, pp. 34-35; Standards, Nup. S-6)	imber 5 and Number 6,	x
d. Transmission, symptoms, and prevention of STDs? (Standards, Number 17, p. S-12)		>
e. STIS issues; e.g., genetic counseling, noncommunicable di issues, and substance abuse? (Science Framework Addendum, pp. 12-13, 31, 37; Standa and Number 17, p. S-12)		
Factual inaccuracies, if any, in the preceding section		



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II. LIFE SCIENCE: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

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- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.





INFERRING

- · Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

DEFINITION OF TERMS

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REVIEW OF PROCESS SKILLS[†]

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	x				
2. Communicating?		X			
3. Comparing?		X			
4. Organizing?			X		
5. Relating?				X	
6. Inferring?				X	
7. Applying?				Х	

Science Framework Addendum, p. 5.



^{*}Science Framework Addendum, pp. 4-5.

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III. LIFE SCIENCE: TEACHER'S EDITION

DEFINITION OF TERMS

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)		x		
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	х		-	
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	x			
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)	x			



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5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")			х
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)	x		
7.	Instructional activities that integrate knowledge and skls learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x	
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)			x
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)			x
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)			x



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IV. LIFE SCIENCE: STUDENT'S LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covere
А. То	what extent does the student's laboratory manual include:	4			
1.	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	X			
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	x			
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		Х		1
					<u>:</u> !



Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		x		
Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				x
what extent are the following process skills taught throughout the laboratory manual:*				
Observing?	x			
Communicating?	Х			
Comparing?	Х			
Organizing?		x		
Relating?			x	
Inferring?			x	
Applying?			X	
	(Science Framework Addendum, p. 104, "Organization of Materials," Number 4) Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10) what extent are the following process skills taught throughout the laboratory manual:* Observing? Communicating? Organizing? Relating?	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10) what extent are the following process skills taught throughout the laboratory manual:* Observing? Communicating? X Comparing? Relating?	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. LIFE SCIENCE: TEACHER'S EDITION OF THE LABORATORY MANUAL

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To v	what extent does the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)	x			
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)		X		
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)				x
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)				x



5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)			x
6.	Resource lists for acquiring:			:
	a. Equipment?		X	; ; ;
_	b. Chemicals?		x	
	c. Supplies?		x	
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	,-	x	
7.	Necessary solutions and recipes? (Scic .ce Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)	x		
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)		x	
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)			x
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)			, x

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I. LIFE SCIENCE: CONTENT (STUDENT'S EDITION)

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covere
. Na	ature of Science					
To	what extent does the textbook include discussions about:					
1.	The characteristics of living things; e.g., reproduction and growth? (Science Framework Addendum, p. 14)			x		
2.	The "scientific method"; e.g., observation, hypothesis, and experimentation? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1)		x			
3.	Science, Technology, Individuals, and Society (STIS) issues: life science in everyday life; e.g., health, ethical concerns, and careers? (Science Framework Addendum, p. 13)			X	,	
	Factual inaccuracies, if any, in the preceding section [†]		d.====d		l	
() d						<u></u>



B.	Ec	cology				
	To	what extent does the textbook include discussions about:				
	1.	Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)		x		
	2.	Levels of ecological organization; e.g., populations, communities, and biomes? (Science Framework Addendum, p. 39; Standards, Number 4, p. S-5, and Number 16, p. S-11)		x		
	3.	Structure of and energy flow through the ecosystem; e.g., producers, consumers, decomposers, and energy pyramids? (Science Framework Addendum, p. 40)		x		
	4.	STIS issues: conservation and the impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)	x			
		Factual inaccuracies, if any, in the preceding section				
c.	He	redity				
	То	what extent does the textbook include discussions about:				
	1.	Mendelian genetics? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10)			x	
	2.	The concept of passing of genetic traits from parent to offspring; e.g., family pedigree? (Standards, Number 14, p. S-10)			x	
	3.	Genetic diseases; e.g., hemophilia, Down's syndrome, cystic fibrosis, or sickle-cell anemia? (Standards, Number 12, p. S-9)				
		(orbinal to, 11dillot 12, p. 5-7)			X	

NOTE: The secondary life science textbook review instrument is correlated with the following resource documents:

· *Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

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These documents are published by the California State Department of Education. (See pages 403 and 404 for ordering information).



[.] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{&#}x27;A factual inaccuracy was noted in this section. The publisher has given assurances that the inaccuracy will be corrected in the next edition of this book. For more information see "Factual Inaccuracies" on page xii.

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C. Heredity—Continued					
4. STIS issues; e.g., the benefits and problems of genetic engineering? (Science Framework Addendum, pp. 19-20)			x		
— Factual inaccuracies, if any, in the preceding section					
D. Evolution					
To what extent does the textbook include discussions about:					
 The factual basis for evolution; e.g., anatomical evidence and fossil records? (Standards, Number 15, p. S-11) 			x		
2. Human evolution? (Science Framework Addendum, p. 35)					x



			,	· · · · · ·	
3.	The mechanisms of evolution; e.g., mutation, selection, speciation, adaptation, and extinction?				
	(Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)	X			
	Factual inaccuracies, if any, in the preceding section				
E. C	lassification				
T	o what extent does the textbook include discussions about:			1	
1.	The historical development of systems of classification; e.g., Aristotle and Linnaeus? (Standards, p. S-1, Number 3, p. S-5)		x		
2.	Identification and description of the five kingdom system of classifying living things? (Science Framework Addendum, p. 14)		x		
	Factual inaccuracies, if any, in the preceding section				
F. E	nergy Processes				
T	To what extent does the textbook include discussions about:				
1.	The chemical basis of life; e.g., atoms, molecules, bonds, and reactions? (Science Framework Addendum, p. 24)		x		
2.	Human nutrition as related to everyday diet; e.g., food, vitamins, water, and minerals? (Science Framework Addendum, pp. 34-35; Standards, Number 8, p. S-7)	х			
3.	Cellular respiration? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4, and Number 4, p. S-5)			х	
4.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9)		x		
5.	The conversion of matter and energy as it applies to living systems; e.g., conservation of energy and matter? (Science Framework Addendum, p. 24; Standards, Number 1, p. S-4)	x			
	Factual inaccuracies, if any, in the preceding section		<u>. </u>		1



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
G. C	ells, Tissues, Organs, and Organ Systems					
T	o what extent does the textbook include discussions about:					
1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Standards, Number 12, Activity Number 3, p. S-9)			X		
2.	The structures and functions of cells and cell components, including the similarities and differences between plant and animal cells? (Standards, Number 1, p. S-4, and Number 12, p. S-9)		x			
3.	The cell cycle, including mitosis and meiosis? (Standards, Number 12, p. S-9)			x		
4.	The structure and function of DNA and RNA in cell replication and in the reproduction of organisms? (Standards, Number 12, p. S-9)					CXO



5	The interrelationships among cells, tissues, organs, and organ systems within multicellular organisms? (Standards, Number 2, p. S-4)				
	Factual inaccuracies, if any, in the preceding section			X	
	'iruses				
	o what extent does the textbook include discussions about:				
1,	Characteristics of viruses? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5)			x	
2.	. Reproduction of viruses? (Science Framework Addendum, p. 27)				x
3.	Human diseases which involve viral pathogens? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12)			x	
	Factual inaccuracies, if any, in the preceding section		-		
I. M	Ionera				
T	o what extent does the textbook include discussions about:				
1.	The major groups of monera? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5)			x	
2.	The types of diseases produced by certain monera? (Science Framework Addendum, p. 27)		x		
3.	Reproduction in monera? (Science Framework Addendum, p. 26)				х
4.	STIS issues; e.g., food production, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)	x			



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ī.	Protists					
1	To what extent does the textbook include discussions about:					
	1. The major groups of protists? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)		x			· deliverage of the second of
	2. Diseases caused by protists? (Science Framework Addendum, p. 27)					,
,	3. Reproduction in protists? (Science Framework Addendum, p. 26)				x	
4	4. STIS issues; e.g., food production, waste disposal, industrial products, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)			X		



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	Factual inaccuracies, if any, in the preceding section				
K. F	rungi				
T	o what extent does the textbook include discussions about:				
1	. The major groups of fungi? (Science Framework Addendum, pp. 14-15, 27; Standards, Number 3, p. S-5)		x		
2	Diseases caused by fungi; e.g., athlete's foot, ringworm, yeast infection, smuts, and rusts?				
	(Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)		X		
3	. Asexual and sexual reproduction in fungi? (Science Framework Addendum, p. 26)			х	
4	STIS issues; e.g., food (toxic mushrooms), beverages, or antibiotics? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12)		х		
	Factual inaccuracies, if any, in the preceding section				
. P	lants				
T	o what extent does the textbook include discussions about:				
1.	. Classification of plants into groups? (Standards, Number 4, p. S-5)	x			
2.	The structures and the functions of the parts of plants? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9)	x			
3.	. Response to stimuli? (Science Framework Addendum, p. 24)			x	
4.	. Plant adaptations? (Science Framework Addendum, pp. 18, 22, and 24)	x			
5.	Asexual and sexual reproduction in plants? (Standards, Number 13, p. S-10)	x			



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
L. Plants—Continued					
6. STIS issues; e.g., the useful applications of plants and plant products? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)			x		
— Factual inaccuracies, if any, in the preceding section					
M. Animals					
To what extent does the textbook include discussions about:					
1. Invertebrates			:		
 Descriptions of the major phyla; e.g., porifera, coelenterates, worms, mollusks, echinoderms, and arthropods? (Science Framework Addendum, pp. 29-30) 		v	;		
		X			
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***	b. Structure and function of organs and systems? (Science Framework Addendum, pp. 28-29)	x			, -
	c. Growth and development? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10)	х			
	d. Reproduction, including sexual and asexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10)	х			
	Behavior; e.g., social and reproductive? (Standards, Number 5, p. S-6)			x	
-	STIS issues; e.g., agriculture, food, pests, and aquaculture? (Standards, Number 17, p. S-12)		x		
2.	Vertebrates (Nonhuman)				
	 Description of major classes of chordates; e.g., fish, amphibians, reptiles, birds, and mammals? (Science Framework Addendum, p. 29) 	x			
	o. Structure and functions of organs and systems? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8)	х			
	c. Growth, development, and embryology? (Science Framework Addendum, p. 31)	х			
	l. Sexual reproduction? (Standards, Number 13, p. S-10)		x		
, , , , , , , , , , , , , , , , , , ,	e. Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-10)		x		
	STIS issues; e.g., wildlife management? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12)			x	



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—	-Continued					
3. Verteb	orates (Human)					
a. Str	ructure, function, and maintenance of major body systems:					
(1)	Nervous system and sense organs?		x			
(2)	Circulatory system?		x			
(3)	Digestive system?		х			
(4)	Respiratory system?			х		
(5)	Reproductive system?			x		
BO7 (6)	Musculoskeletal system?		х			Gi



•	(7) Excretory system?		x			
	(8) Integvinentary system?				х	
	(9) Endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7)			x		
b.	Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7)			x		
c.	Behavior, e.g., innate compared with learned? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6)					x
d.	Transmission, symptoms, and prevention of STDs? (Standards, Number 17, p. S-12)					x
e.	STIS issues; e.g., genetic counseling, noncommunicable diseases, environmental issues, and substance abuse? (Science Framework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12)	x		-		
	Factual inaccuracies, if any, in the preceding section				L	

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- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

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- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.





INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

DEFINITION OF TERMS

DEGREE OF EMPHASIS

HIGH EMPHASIS means that the topic is explained and reinforced by many examples in several places throughout the textbook.

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REVIEW OF PROCESS SKILLS

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	x				
2. Communicating?	X		•		
3. Comparing?	X				
4. Organizing?	X				
5. Relating?			X		
6. Inferring?			X	· · · · · · · · · · · · · · · · · · ·	
7. Applying?			X		

Science Framework Addendump. 5.



^{*}Science Framework Addendum, pp. 4-5.

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III. LIFE SCIENCE: TEACHER'S EDITION

DEFINITION OF TERMS

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	vhat extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)			x	
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	x			
3.	Material that er:gages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials." Number 4)	x			
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)	x			



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5.	Consideration of the instructional needs of lim'red-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")			x
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)	x		
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x	
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)			x
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	x		
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)			X



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IV. LIFE SCIENCE: STUDENT'S LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
A. To	what extent does the student's laboratory manual include:				
1.	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)		x		
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	x			
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	X	, , , , , , , , , , , , , , , , , , , ,		
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	x			



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5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)	x			
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			X	
	what extent are the following process skills taught throughout the laboratory manual:* Observing?	х			
2.	Communicating?		X		
3.	Comparing?	Х			+
4.	Organizing?	Х			 -
5.	Relating?	X			
6.	Inferring?		X		
7.	Applying?			X	

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. LIFE SCIENCE: TEACHER'S EDITION OF THE LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To w	what extent does the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)		x		
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)				x
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		x		
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)			X	
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5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)	x			
б.	Resource lists for acquiring:				
	a. Equipment?			X	
	b. Chemicals?			Х	
	c. Supplies?			X	
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)			x	
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104–105, "Teachers' Materials," Number 2)	x			
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			x	
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)		x		-
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)			x	
			1		



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I. LIFE SCIENCE: CONTENT (STUDENT'S EDITION)

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covere
A. Na	ature of Science					
To	what extent does the textbook include discussions about:					
1.	The characteristics of living things; e.g., reproduction and growth? (Science Framework Addendum, p. 14)				x	
2.	The "scientific method"; e.g., observation, hypothesis, and experimentation? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1)	X				
3.	Science, Technology, Individuals, and Society (STIS) issues: life science in everyday life; e.g., health, ethical concerns, and careers? (Science Framework Addendum, p. 13)			X		
	Factual inaccuracies, if any, in the preceding section [†]		<u></u>	-		1
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B.	Ecology				
	To what extent does the textbook include discussions about:				
	1. Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)	x			
	 Levels of ecological organization; e.g., populations, communities, and biomes? (Science Framework Addendum, p. 39; Standards, Number 4, p. S-5, and Number 16, p. S-11) 	x			
	3. Structure of and energy flow through the ecosystem; e.g., producers, consumers, decomposers, and energy pyramids? (Science Framework Addendum, p. 40)		x		
	4. STIS issues: conservation and the impact of society or the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards. Number 16, p. S-11)		x		
	Factual inaccuracies, if any, in the preceding section				
c.	Heredity				
	To what extent does the textbook include discussions about:				
	1. Mendelian genetics? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10)	x			
	2. The concept of passing of genetic traits from parent to offspring; e.g., family pedigree? (Standards, Number 14, p. S-10)	x			
	3. Genetic diseases; e.g., hemophilia, Down's syndrome, cystic fibrosis, or sickle-cell anemia? (Standards, Number 12, p. S-9)			x	

NOTE: The secondary life science textbook review instrument is correlated with the following resource documents:

. *Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

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These documents are published by the California State Department of Education. (See pages 403 and 404 for ordering information).



[.] The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{&#}x27;A factual inaccuracy was noted in this section. The publisher has given assurances that the inaccuracy will be corrected in the next edition of this book. For more information see "Factual Ins curacies" on page xii.

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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
C. Heredity—Continued					
4. STIS issues; e.g., the benefits and problems of genetic engin (Science Framework Addendum, pp. 19-20)	ering?			1	x
Factual inaccuracies, if any, in the preceding section					
D. Evolution					
To what extent does the textbook include discussions about:				•	
 The factual basis for evolution; e.g., anatomical evidence and (Standards, Number 15, p. S-11) 	fossil records?			x	
2. Human evolution? (Science Framework Addendum, p. 35)					x



3. The mechanisms of evolution; e.g., mutation, selection, speciation, adaptation, and extinction?			
(Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)	x		
— Factual inaccuracies, if any, in the preceding section			
E. Classification			
To what extent does the textbook include discussions about:			
1. The historical development of systems of classification; e.g., Aristotle and Linnaeus? (Standards, p. S-1, Number 3, p. S-5)			X
2. Identification and description of the five kingdom system of classifying living things? (Science Framework Addendum, p. 14)	х		
Factual inaccuracies, if any, in the preceding section			
. Energy Processes			
To what extent does the textbook include discussions about:			
1. The chemical basis of life; e.g., atoms, molecules, bonds, and reactions? (Science Framework Addendum, p. 24)		x	
2. Human nutrition as related to everyday diet; e.g., food, vitamins, water, and minerals? (Science Framework Addendum, pp. 34-35; Standards, Number 8, p. S-7)		x	
3. Cellular respiration? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4, and Number 4, p. S-5)		х	
4. Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9)	x		
5. The conversion of matter and energy as it applies to living systems; e.g., conservation of energy and matter?			
(Science Framework Addendum, p. 24; Standards, Number 1, p. S-4)	X		
Factual inaccuracies, if any, in the preceding section		L	<u> </u>



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
G. C	ells, Tissues, Organs, and Organ Systems					
To	what extent does the textbook include discussions about:					
1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Standards, Number 12, Activity Number 3, p. S-9)				x	
2.	The structures and functions of cells and cell components, including the similarities and differences between plant and animal cells? (Standards, Number 1, p. S-4, and Number 12, p. S-9)			x		
3.	The cell cycle, including mitosis and meiosis? (Standards, Number 12, p. S-9)				х	
4. S C F	The structure and function of DNA and RNA in cell replication and in the reproduction of organisms? (Standards, Number 12, p. S-9)				-	x



`. <u>.</u> :	5: The interrelationships among cells, tissues, organs, and organ systems within multicellular organisms? (Standards, Number 2, p. S-4)			x
	Factual inaccuracies, if any, in the preceding section			
Н.	Viruses			
•	To what extent does the textbook include discussions about:			
	1. Characteristics of viruses? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5)			x
	2. Reproduction of viruses? (Science Framework Addendum, p. 27)			x
•	3. Human diseases which involve viral pathogens? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12)			x
	Factual inaccuracies, if any, in the preceding section			
I.]	Monera			
•	To what extent does the textbook include discussions about:			
	1. The major groups of monera? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5)		x	
	2. The types of diseases produced by certain monera? (Science Framework Addendum, p. 27)			x
2	3. Reproduction in monera? (Science Framework Addendum, p. 26)			X
4	STIS issues; e.g., food production, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)			x
	Factual inaccuracies, if any, in the preceding section	<u> </u>		<u> </u>



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
. P	rotists					
T	o what extent does the textbook include discussions about:					
1.	The major groups of protists? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)				x	
2.	Diseases caused by protists? (Science Framework Addendum, p. 27)					x
3.	Reproduction in protists? (Science Framework Addendum, p. 26)					x
4.	STIS issues; e.g., food production, waste disposal, industrial products, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)					x



	Factual inaccuracies, if any, in the preceding section		
K. F	ungi		
T	o what extent does the textbook include discussions about:		
1.	The major groups of fungi? (Science Framework Addendum, pp. 14-15, 27; Standards, Number 3, p. S-5)	x	
2.	Diseases caused by fungi; e.g., athlete's foot, ringworm, yeast infection, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)		X
3.		x	A
4.	STIS issues; e.g., food (toxic mushrooms), beverages, or antibiotics? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12)		x
	Factual inaccuracies, if any, in the preceding section		
L. P	lants		
T	o what extent does the textbook include discussions about:		
1.	Classification of plants into groups? (Standards, Number 4, p. S-5)	x	
2.	The structures and the functions of the parts of plants? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9)		x
3.	Response to stimuli? (Science Framework Addendum, p. 24)		x
4.	Plant adaptations? (Science Framework Addendum, pp. 18, 22, and 24)		x
5.	Asexual and sexual reproduction in plants? (Standards, Number 13, p. S-10)	x	



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
L.	Plants—Continued					
	6. STIS issues; e.g., the useful applications of plants and plant products? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)					X
_	Factual inaccuracies, if any, in the preceding section					
М.	Animals	!		1		
	To what extent does the textbook include discussions about:	**				
	1. Invertebrates		!			
	a. Descriptions of the major phyla; e.g., porifera, coelenterates, worms, mollusks, echinoderms, and arthropods?					7-7-8-8-8-8-8-8-8-8-8-8-8-8-8-8-8-8-8-8
×	(Science Framework Addendum, pp. 29–30)				X	£
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in green	b.	Structure and function of organs and systems?				
		(Science Framework Addendum, pp. 28–29)				X
	c .	Growth and development? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10)				x
	đ.	Reproduction, including sexual and asexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10)			х	
	e.	Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-6)				x
	f.	STIS issues; e.g., agriculture, food, pests, and aquaculture? (Standards, Number 17, p. S-12)				x
2.	Ve	ertebrates (Nonhuman)				
	a.	Description of major classes of chordates; e.g., fish, amphibians, reptiles, birds, and mammals? (Science Framework Addendum, p. 29)			x	
	b.	Structure and functions of organs and systems? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and				x
	c.	Some Pramework Addendum, p. 31)	x			
	d.	Sexual reproduction? (Standards, Number 13, p. S-10)			x	
	e.	Behavior; e.g., social and reproductive? (Standards, Number 5, p. S-10)		X		
	f.	STIS issues; e.g., wildlife management? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12)	* **********			x



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued					
3. Vertebrates (Human)					
a. Structure, function, and maintenance of major body systems:					
(1) Nervous system and sense organs?					x
(2) Circulatory system?					X
(3) Digestive system?					X
(4) Respiratory system?					X
(5) Reproductive system?			X	<u>-</u> . <u>-</u> -	
C47 (6) Musculoskeletal system?					x C



(7) Excretory system?			>
(8) Integumentary system?			X
(9) Endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7)			X
b. Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7)		x	
c. Behavior; e.g., innate compared with learned? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6)			X
d. Transmission, symptoms, and prevention of STDs? (Standards, Number 17, p. S-12)			X
e. STIS issues; e.g., genetic counseling, noncommunicable diseases, environmental issues, and substance abuse? (Science Framework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12)	x		
Factual inaccuracies, if any, in the preceding section			



II. LIFE SCIEN ?: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

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F-1-21

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- Data gathering
- Sequencing
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- Classifying

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- Using space-time relationships
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65.

ERIC

Full Text Provided by ERIC

INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- Formulating explanatory models and theorizing

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APPLYING

- Using knowledge to solve problems
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REVIEW OF PROCESS SKILLS

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?		x			
2. Communicating?			X		
3. Comparing?		x			
4. Organizing?		X	*		
5. Relating?			X		
6. Inferring?			X		
7. Applying?				X	

Science Framework Addendum, p. 5.

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^{*}Science Framework Addendum, pp. 4-5.

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III. LIFE SCIENCE: TEACHER'S EDITION

DEFINITION OF TERMS

DEGREE OF EMPHASIS

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To w	hat extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)				x
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	х			
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		х		
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)		Х		



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5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")			x
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)		x	
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x	
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)	x		
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)		x	
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)	x		





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IV. LIFE SCIENCE: STUDENT'S LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
А. Т	o what extent does the student's laboratory manual include:				
1	. Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
2	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	X			
3	. Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)			X	
4	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)			х	



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5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		x		
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				x
	what extent are the following process skills taught throughout the laboratory manual:* Observing?	х			
2.	Communicating?			X	
3.	Comparing?	x			
4.	Organizing?		X	 	
5.	Relating?		X		
6.	Inferring?		X		-
7.	Applying?			X	

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. LIFE SCIENCE: TEACHER'S EDITION OF THE LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To w	what extent does the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)			x	
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		X		
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)			x	



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· '5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)	x	
6.	Resource lists for acquiring: a. Equipment?	x	
	b. Chemicals?	X	
	c. Supplies?	X	
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	x	
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)		X
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)		X
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)	x	
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)	x	



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I. LIFE SCIENCE: CONTENT (STUDENT'S EDITION)

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covere
A. Na	ature of Science			_		
To	o what extent does the textbook include discussions about:					
1.	The characteristics of living things; e.g., reproduction and growth? (Science Framework Addendum, p. 14)			x		
2.	The "scientific method"; e.g., observation, hypothesis, and experimentation? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1)		x			
3.	Science, Technology, Individuals, and Society (STIS) issues: life science in everyday life; e.g., health, ethical concerns, and careers? (Science Framework Addendum, p. 13)	x				
	Factual inaccuracies, if any, in the preceding section [†]		<u> </u>		0.0	



B. : 1	Ecology			
7	To what extent does the textbook include discussions about:			
1	Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)	x		
2	2. Levels of ecological organization; e.g., populations, communities, and biomes? (Science Framework Addendum, p. 39; Standards, Number 4, p. S-5, and Number 16, p. S-11)		x	
3	3. Structure of and energy flow through the ecosystem; e.g., producers, consumers, decomposers, and energy pyramids? (Science Framework Addendum, p. 40)		x	
4	STIS issues: conservation and the impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)	x		
	Factual inaccuracies, if any, in the preceding section			
 С. н	Heredity			
7	To what extent does the textbook include discussions about:			
1	. Mendelian genetics? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10)		x	
2	The concept of passing of genetic traits from parent to offspring; e.g., family pedigree? (Standards, Number 14, p. S-10)		х	
3	Genetic diseases; e.g., hemophilia, Down's syndrome, cystic fibrosis, or sickle-cell anemia? (Standards, Number 12, p. S-9)	x		

NOTE: The secondary life science textbook review instrument is correlated with the following resource documents:

* *Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

089

These documents are published by the California State Department of Education. (See pages 403 and 404 for ordering information).



The Science Framework Addendum for California . blic Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

A factual inaccuracy was noted in this section. The publisher has given assurances that the inaccuracy will be corrected in the next edition of this book. For more information see "Factual Inaccuracies" on page 2 ii.

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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
C. Heredity—Continued					
4. STIS issues; e.g., the benefits and problems of genetic engineering? (Science Framework Addendum, pp. 19-20)			X		
— Factual inaccuracies, if any, in the preceding section					
D. Evolution					
To what extent does the textbook include discussions about:					
 The factual basis for evolution; e.g., anatomical evidence and fossil records? (Standards, Number 15, p. S-11) 		x			
2. Human evolution? (Science Framework Addendum, p. 35)					х
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3.	The mechanisms of evolution; e.g., mutation, selection, speciation, adaptation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)		x		
	Factual inaccuracies, if any, in the preceding section				
. C l	lassification				
To	o what extent does the textbook include discussions about:				
1.	The historical development of systems of classification; e.g., Aristotle and Linnaeus? (Standards, p. S-1, Number 3, p. S-5)		x		
2.	Identification and description of the five kingdom system of classifying living things? (Science Framework Addendum, p. 14)		x		
	Factual inaccuracies, if any, in the preceding section				
. E	nergy Processes				
T	o what extent does the textbook include discussions about:				
1.	The chemical basis of life; e.g., atoms, molecules, bonds, and reactions? (Science Framework Addendum, p. 24)			x	
2.	Human nutrition as related to everyday diet; e.g., food, vitamins, water, and minerals? (Science Framework Addendum, pp. 34-35; Standards, Number 8, p. S-7)	x			
3.	Cellular respiration? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4, and Number 4, p. S-5)			x	
4.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9)		x		
5.	energy and matter?				
	(Science Framework Addendum, p. 24; Standards, Number 1, p. S-4)		X		
	Factual inaccuracies, if any, in the preceding section		<u> </u>		*



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···	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
3. C	Cells, Tissues, Organs, and Organ Systems					
T	o what extent does the textbook include discussions about:					
1.	. A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Standards, Number 12, Activity Number 3, p. S-9)			x		
2.	The structures and functions of cells and cell components, including the similarities and differences between plant and animal cells? (Standards, Number 1, p. S-4, and Number 12, p. S-9)		x			
3.	The cell cycle, including mitosis and meiosis? (Standards, Number 12, p. S-9)	x				
4.	The structure and function of DNA and RNA in cell replication and in the reproduction of organisms? (Standards, Number 12, p. S-9)		X			
	organisms?			X	<u>x</u>	x



	5. The interrelationships among cells, tissues, organs, and organ systems within multicellular organisms? (Standards, Number 2, p. S-4)	x		
	Factual inaccuracies, if any, in the preceding section			
н.	Viruses			
•	To what extent does the textbook include discussions about:			
	1. Characteristics of viruses? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5)	x		
	2. Reproduction of viruses? (Science Framework Addendum, p. 27)		x	
	3. Human diseases which involve viral pathogens? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12)	x		
	Factual inaccuracies, if any, in the preceding section			
I.	Monera			
1	To what extent does the textbook include discussions about:		1	
	1. The major groups of monera? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p S-5)	x		
	2. The types of diseases produced by certain monera? (Science Framework Addendum, p. 27)	x		
	3. Reproduction in monera? (Science Framework Addendum, p. 26)		x	
	 STIS issues; e.g., food production, waste disposel, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12) 	x		
4	Factual inaccuracies, if any, in the preceding section			



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		Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
J.	Pr	otists					
	To	what extent does the textbook include discussions about:					
	1.	The major groups of protists? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)		x			5 5
	2.	Diseases caused by protists? (Science Framework Addendum, p. 27)				x	
	3.	Reproduction in protists? (Science Framework Addendum, p. 26)				X	
	4.	STIS issues; e.g., food production, waste disposal, industrial products, and pollution? (Science Fra nework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)				x	



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	Factual inaccuracies, if any, in the preceding section					
K. Fı	ungi					
To	what extent does the textbook include discussions about:					4
1.	The major groups of fungi? (Science Framework Addendum, pp. 14-15, 27; Standards, Number 3, p. S-5)			X		
2.	Diseases caused by fungi; e.g., athlete's foot, ringworm, yeast infection, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)			x		
3.	Asexual and sexual reproduction in fungi? (Science Framework Addendum, p. 26)			x		
4.	STIS issues; e.g., food (toxic mushrooms), beverages, or antibiotics? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12)			x		+
	Factual inaccuracies, if any, in the preceding section					
. Pla	ants	-	1	<u> </u>	1	
To	what extent does the textbook include discussions about:					
	Classification of plants into groups? (Standards, Number 4, p. S-5)	** ** ** ** ** ** ** ** ** ** ** ** **	X	1		
2.	The structures and the functions of the parts of plants? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9)	X	1			
3.	Response to stimuli? (Science Framework Addendum, p. 24)		x		*	
4.	Plant adaptations? (Science Framework Addendum, pp. 18, 22, and 24)			<u> </u>	i 	<u> </u>
5.	Asexual and sexual reproduction in plants? (Standards, Number 13, p. S-10)		X			<u> </u>
	691				682	<u></u>



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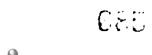
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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
L. Plants—Continued					
6. STIS issues; e.g., the useful applications of plants and plant products? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)			x		
- Factual inaccuracies, if any, in the preceding section					1
M. Animals	- ! !				
To what extent does the textbook include discussions about:					•
1. Invenebrates					
a. Descriptions of the major phyla; e.g., porifera, coelenterates, worms, mollusks, echinoderms, and anthropods?					
(Science Framework Addendum, pp. 29-30)		X			



ъ.	Structure and function of organs and systems? (Science Framework Addendum, pp. 28-29)	x			
c.	Growth and development? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10)			x	
đ.	Reproduction, including schual and asexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10)		х		
e.	Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-6)	x			
f.	STIS issues; e.g., agriculture, food, pests, and aquaculture? (Standards, Number 17, p. S-12)			x	
2. Ve	ertebrates (Nonhuman)				
a.	Description of major classes of chordates; e.g., fish, amphibians, reptiles, birds, and mammals? (Science Framework Addendum, p. 29)		x		
b.	Structure and functions of organs and systems? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8)	x			
c.	Growth, development, and embryology? (Science Framework Addendum, p. 31)			x	
d.	Sexual reproduction? (Standards, Number 13, p. S-10)			x	
e.	Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-10)		x		
f.	STIS issues; e.g., wildlife management? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12)			x	



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued					
3. Vertebrates (Human)					
a. Structure, function, and maintenance of major body systems:					
(1) Nervous system and sense organs?		X			1
(2) Circulatory system?		X			
(3) Digestive system?		X			
(4) Respiratory system?		X			
(5) Reproductive system?			X		
(6) Musculoskeletal system?		X			



(7) Excretory system?		x	
(8) Integumentary system?		x	
(9) Endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. S-7)		x	
b. Growth, development. and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7)	х		
c. Behavior, e.g., innate compared with learned? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6)		х	
d. Transmission, symptoms, and prevention of STDs? (Standards, Number 17, p. S-12)		x	
e. STIS issues; e.g., genetic counseling, noncommunicable diseases, environmental issues, and substance abuse? (Science Framework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12)	x		
Factual inaccuracies, if any, in the preceding section		<u></u>	



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II. LIFE SCIENCE: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- · Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- · Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.



INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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REVIEW OF PROCESS SKILLS

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	x				
2. Communicating?	x				
3. Comparing?	X				
4. Organizing?		X			
5. Relating?		X			
6. Inferring?			X		
7. Applying?				X	

Science Framework Addendum, p. 5.

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^{*}Science Framework Addendum, pp. 4-5.

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Consens	High emphasis	Moderale emphasis	Limited emphasis	Not covered
To what extent does the teacher's edition of the textbook include:				
 Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4) 		x		
2. A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	X			
3. Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		X		
4. Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)	X		-	
<u> </u>				



(i, j

5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")				x
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)			х	
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	x			·
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)				x
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Adlendum, p. 105, "Teachers' Materials," Number 3)	х			
10.	A variety of assessment techniques: e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)		x		



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IV. LIFE SCIENCE: STUDENT'S LABORATORY MANUAL

DEFINITION OF TERMS

DEGREE OF EMPHASIS

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Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
. To what extent does the student's laboratory manual include:				
 Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6) 	x			
2. Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	x			
3. Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	x			
4. Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing (Science Framework Addendum, p. 104, "Content and Process," Number 5)	?	x		



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5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			x .	
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				х
	o what extent are the following process skills taught throughout the laboratory manual:* Observing?	x			
2.	Communicating?	X			
3.	Comparing?	x			
4.	Organizing?		X		
5.	Relating?		х		
6.	Inferring?			X	
7.	Applying?			X	

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. LIFE SCIENCE: TEACHER'S EDITION OF THE LABORATORY MANUAL

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To w	hat extent does the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)	x			
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)			x	
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)				х
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x		
P7.	() 3				3114



¹ 5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)		x		
6.	Resource lists for acquiring:				
	a. Equipment?	x			
	b. Chemicals?	x			
	c. Supplies?	x			
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	х			
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104–105, "Teachers' Materials," Number 2)	x			
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)		X		
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)			x	
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)			x	





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I. LIFE SCIENCE: CONTENT (STUDENT'S EDITION)

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covere
. N	ature of Science					
To	what extent does the textbook include discussions about:					
1.	The characteristics of living things; e.g., reproduction and growth? (Science Framework Addendum, p. 14)	x				
2.	The "scientific method"; e.g., observation, hypothesis, and experimentation? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1)	x				
3.	Science, Technology, Individuals, and Society (STIS) issues: life science in everyday life; e.g., health, ethical concerns, and careers? (Science Framework Addendum, p. 13)	x				
	Factual inaccuracies, if any, in the preceding section [†]		<u> </u>			<u> </u>



B. E	Cology				
T	o what extent does the textbook include discussions about:	1			
1	Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)	x			
2.	Levels of ecological organization; e.g., populations, communities, and biomes? (Science Framework Addendum, p. 39; Standards, Number 4, p. S-5, and Number 16, p. S-11)	x			
3.	Structure of and energy flow through the ecosystem; e.g., producers, consumers, decomposers, and energy pyramids? (Science Framework Addendum, p. 40)		X		
4.	STIS issues: conservation and the impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)	x			
	Factual inaccuracies, if any, in the preceding section				
. н	eredity				
	what extent does the textbook include discussions about: Mendelian genetics? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10)		X		
2.	The concept of passing of genetic traits from parent to offspring; e.g., family pedigree? (Standards, Number 14, p. S-10)	x			
3.	Genetic diseases; e.g., hemophilia, Down's syndrome, cystic fibrosis, or sickle-cell anemia? (Standards, Number 12, p. S-9)			X	

NOTE: The secondary life science textbook review instrument is correlated with the following resource documents:

These documents are published by the California State Department of Education. (See pages 403 and 404 for ordering information).



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The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum. · *Model Curriculum Standards: Grades Nine Through Twelve is cited as Standards.

^{&#}x27;A factual inaccuracy was noted in this section. The publisher has given assurances that the inaccuracy will be corrected in the next edition of this book. For more information see "Factual Inaccuracies" on page xii.

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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
C. Heredity-Continued					
4. STIS issues; e.g., the benefits and problems of genetic engineering? (Science Framework Addendum, pp. 19-20)			X		
— Factual inaccuracies, if any, in the preceding section					
D. Evolution				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
To what extent does the textbook include discussions about:					
 The factual basis for evolution; e.g., anatomical evidence and fossil records? (Standards, Number 15, p. S-11) 			х		
2. Human evolution? (Science Framework Addendum, p. 35)			x		



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3	The mechanisms of evolution; e.g., mutation, selection, speciation, adaptation, and extinction? (Science Framework Addendum, p. 18; Standards, Number 15, p. S-11)		x		
	Factual inaccuracies, if any, in the preceding section				
Ĕ. (Classification				
7	o what extent does the textbook include discussions about:				
1	. The historical development of systems of classification; e.g., Aristotle and Linnaeus? (Standards, p. S-1, Number 3, p. S-5)		x		
2	. Identification and description of the five kingdom system of classifying living things? (Science Framework Addendum, p. 14)	x			
	Factual inaccuracies, if any, in the preceding section				
. E	nergy Processes				
7	To what extent does the textbook include discussions about:				
1	The chemical basis of life; e.g., atoms, molecules, bonds, and reactions? (Science Framework Addendum, p. 24)		x		
2	Human nutrition as related to everyday diet; e.g., food, vitamins, water, and minerals? (Science Framework Addendum, pp. 34-35; Standards, Number 8, p. S-7)		х		
3	Cellular respiration? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4, and Number 4, p. S-5)		x		
4.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9)			x	
5.	energy and matter?				
	(Science Framework Addendum, p. 24; Standards, Number 1, p. S-4)		X		
				·	·



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
G. C	Cells, Tissues, Organs, and Organ Systems					
T	o what extent does the textbook include discussions about:					
1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Standards, Number 12, Activity Number 3, p. S-9)			x		
2.	The structures and functions of cells and cell components, including the similarities and differences between plant and animal cells? (Standards, Number 1, p. S-4, and Number 12, p. S-9)			x		
3.	The cell cycle, including mitosis and meiosis? (Standards, Number 12, p. S-9)			х		
4.	The structure and function of DNA and RNA in cell replication and in the reproduction of organisms? (Standards, Number 12, p. S-9)			Х		



	5.	The interrelationships among cells, tissues, organs, and organ systems within multicellular organisms? (Standards, Number 2, p. S-4)	x			
_		Factual inaccuracies, if any, in the preceding section				
	Vi	ruses				
	To	what extent does the textbook include discussions about:				
	1.	Characteristics of viruses? (Science Framework Addendum, p. 27; Standards. Number 3, p. S-5)		x		
	2.	Reproduction of virts? (Science Framework Addendum, p. 27)			· x	
	3.	Human diseases which involve viral pathogens? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12)		x		
_		Factual inaccuracies, if any, in the preceding section				
•	M	onera				
	To	what extent does the textbook include discussions about:				
	1.	The major groups of monera? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5)		x		
	2.	The types of diseases produced by certain monera? (Science Framework Addendum, p. 27)		x		
	3.	Reproduction in monera? (Science Framework Addendum, p. 26)			X	
	4.	STIS issues; e.g., food production, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)			x	
_		Factual inaccuracies, if any, in the preceding section			1	



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
J. P	rotists					
T	o what extent does the textbook include discussions about:					
1.	The major groups of protists? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)			X		
2.	Diseases caused by protists? (Science Framework Addendum, p. 27)			х		
3.	Reproduction in protists? (Science Framework Addendum, p. 26)				X	
4.	STIS issues; e.g., food production, waste disposal, industrial products, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)			x		



Factual inaccuracies, if any, in the preceding section				
K. Fungi				
To what extent does the textbook include discussions about:				
1. The major groups of fungi? (Science Framework Addendum, pp. 14-15, 27; Standards, Number 3, p. S-5)			x	
Diseases caused by fungi; e.g., athlete's foot, ringworm, yeast infection, smuts, and rusts?				
(Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)			X	
3. Asexual and sexual reproduction in fungi? (Science Framework Addendum, p. 26)			х	
4. STIS issues; e.g., food (toxic mushrooms), beverages, or antibiotics? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12)			x	
Factual inaccuracies, if any, in the preceding section				
L. Plants				
To what extent does the textbook include discussions about:				
1. Classification of plants into groups? (Standards, Number 4, p. S-5)	x			
 The structures and the functions of the parts of plants? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9) 		x		
3. Response to stimuli? (Science Framework Addendum, p. 24)			x	
4. Plant adaptations? (Science Framework Addendum, pp. 18, 22, and 24)			x	
5. Asexual and sexual reproduction in plants? (Standards, Number 13, p. S-10)		X		



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
L. Plants—Continued					
6. STIS issues; e.g., the useful applications of plants and plant products? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)			X		
Factual inaccuracies, if any, in the preceding section			•		
M. Animals				as The state of th	
To what extent does the textbook include discussions about:				4	
1. Invertebrates					
a. Descriptions of the major phyla; e.g., porifera, coelenterates, worms, mollusks, echinoderms, and arthropods?					
(Science Framework Addendum, pp. 29-30)	X				



b.	Structure and function of organs and systems? (Science Framework Addendum, pp. 28–29)	x		
c.	Growth and development? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10)		x	
d.	Reproduction, including sexual and asexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10)		x	
e.	Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-6)		x	
f.	STIS issues; e.g., agriculture, food, pests, and aquaculture? (Standards, Number 17, p. S-12)	х		
. Ve	ertebrates (Nonhuman)			
a.	Description of major classes of chordate e.g., fish, amphibians, reptiles, birds, and mammals? (Science Framework Addendum, p. 29)	x		
b.	Structure and functions of organs and systems? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8)	x		
c.	Growth, development, and embryology? (Science Framework Addendum, p. 31)		x	
d.	Sexual reproduction? (Standards, Number 13, p. S-10)		X	
e.	Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-10)		x	
ſ,	STIS issues; e.g., wildlife management? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12)		x	



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued					
3. Vertebrates (Human)					
a. Structure, function, and maintenance of major body systems:					
(1) Nervous system and sense organs?		x			
(2) Circulatory system?		X			
(3) Digestive system?		X	· · · · · · · · · · · · · · · · · · ·		
(4) Respiratory system?			X		
(5) Reproductive system?			X		
(6) Musculoskeletal system?			X		



(7) Excretory system?		x	
(8) Integumentary system?		X	
(9) Endocrine system? (Science Framework Addendum, p. 33; Standards, Number 7, p. 8-7)		x	
b. Growth, development, and embryology? (Science Framework Addendum, p. 34; Standards, Number 7 and Number 8, p. S-7)		x	
c. Behavior, e.g., innate compared with learned? (Science Framework Addendum, pp. 34-35; Standards, Number 5 and Number 6, p. S-6)		x	
d. Transmission, symptoms, and prevention of STDs? (Standards, Number 17, p. S-12)		x	
e. STIS issues; e.g., genetic counseling, noncommunicable diseases, environmental issues, and substance abuse? (Science Framework Addendum, pp. 12-13, 31, 37; Standards, Number 16, p. S-11, and Number 17, p. S-12)	x		
Factual inaccuracies, if any, in the preceding section			



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II. LIFE SCIENCE: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only through the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science. 732



INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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REVIEW OF PROCESS SKILLS

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	x		_		
2. Communicating?	X				
3. Comparing?		X			
4. Organizing?		X			
5. Relating?			X	- The state of the	
6. Inferring?		1	X		
7. Applying?		·	X		

Science Framework Addendum, p. 5



^{*}Science Framework Addendum, pp. 4-5.

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III. LIFE SCIENCE: TEACHER'S EDITION

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	hat extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)	x			
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)	x			
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		х		
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)	х			



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5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")			х	
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)	х			
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		x		
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)			x	
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	x			
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)	x			



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IV. LIFE SCIENCE: STUDENT'S LABORATORY MANUAL

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	Content	High emphasis	Moderale emphasis	Limited emphasis	Not covered
A. T	o what extent does the student's laboratory manual include:				
1.	Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	x			
2.	Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	X			
3.	Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)	X	•		:
4.	Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		х		



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5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)		X		
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			x	
	what extent are the following process skills taught throughout the laboratory manual:* Observing?	x			
2.	Communicating?	X			
3.	Comparing?	X			
4.	Organizing?		X		
5.	Relating?		X		
6.	Inferring?			Х	
7.	Applying?			x	

^{*}Science 1 small of Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. LIFE SCIENCE: TEACHER'S EDITION OF THE LABORATORY MANUAL

DEFINITION OF TERMS

DEGREE OF EMPHASIS

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)	x			
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	X			
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			x	
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		х		



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5.	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)	x			
б.	Resource lists for acquiring:				
	a. Equipment?	x			
	b. Chemicals?	X			
	c. Supplies?	X			-
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)	x			
7.	Necessary solutions and recipes? (Science Framework Addendum, pp. 104–105, "Teachers' Materials," Number 2)	x	<u> </u>		
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			x	
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)		x		
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)			x	

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Scott, Foresman and Company	Scott, Foresman Life Science	1987

I. LIFE SCIENCE: CONTENT (STUDENT'S EDITION)

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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
A. Na	ature of Science					
To	what extent does the textbook include discussions about:					4
1.	The characteristics of living things; e.g., reproduction and growth? (Science Framework Addendum, p. 14)		x			
2.	The "scientific method"; e.g., observation, hypothesis, and experimentation? (Science Framework Addendum, pp. 8, 12; Standards,* p. S-1)			x		
3.	Science, Technology, Individuals, and Society (STIS) issues: life science in everyday life; e.g., health, ethical concerns, and careers? (Science Framework Addendum, p. 13)	x				
	Factual inaccuracies, if any, in the preceding section [†]		al management	l	 	.1



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В.	Ecology					
	To what extent does the textbook include discussions about:					
	 Biotic and abiotic interrelationships; e.g., chains, cycles (such as carbon, nitrogen, and water), and symbiotic relationships? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11) 		x		7	
	 Levels of ecological organization; e.g., populations, communities, and biomes? (Science Framework Addendum, p. 39; Standards, Number 4, p. S-5, and Number 16, p. S-11) 	x				
	 Structure of and energy flow through the ecosystem; e.g., producers, consumers, decomposers, and energy pyramids? (Science Framework Addendum, p. 40) 			X		
	4. STIS issues: conservation and the impact of society on the natural environment; e.g., pollution, endangered species, resource depletion, and recycling? (Science Framework Addendum, p. 42; Standards, Number 16, p. S-11)		X			
	Factual inaccuracies, if any, in the preceding section					
C.	Heredity					
	To what extent does the textbook include discussions about:					4
	1. Mendelian genetics? (Science Framework Addendum, p. 17; Standards, Number 14, p. S-10)			x		
· ·	2. The concept of passing of genetic traits from parent to offspring; e.g., family pedigree? (Standards, Number 14, p. S-10)		x			
	3. Genetic diseases; e.g., hemophilia, Down's syndrome, cystic fibrosis, or sickle-cell anemia? (Standards, Number 12, p. S-9)				X	

NOTE: The secondary life science textbook review instrument is correlated with the following resource documents:



The Science Framework Addendum for California Public Schools: Kindergarten and Grades One Through Twelve is cited as Science Framework Addendum.

^{*} The Science Framework requestion for Catifornia Fuelic Sciences. In the Control of the Science Framework requestion.

*Model Curriculum Standards: Grades Nine Through Tv elve is cited as Standards.

These documents are published by the California State Depritment of Education. (See pages 403 and 404 for ordering information).

A factual inaccuracy was noted in this section. The publisher has given assurances that the inaccuracy will be corrected in the next edition of this book. For more information see "Factual Inaccuracies" on page xii.

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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
					x
in the preceding section					
include discussions about:					
		x			
<i>lum</i> , p. 35)				x	,
	Some and problems of genetic engineering? Sum, pp. 19–20) In the preceding section Similar include discussions about: On; e.g., anatomical evidence and fossil records? 111)	s and problems of genetic engineering? Jum, pp. 19–20) in the preceding section in include discussions about: on; e.g., anatomical evidence and fossil records? -11)	Sometimes of genetic engineering? Sometimes of genetic engineering.	Sometiment and problems of genetic engineering? Sometiment and problems of genetic engineering. Sometiment and problems of genetic engineering. Sometiment and problems of genetic engineering. Sometiment and problems of genetic engineering. Sometiment and problems of genetic engineering. Sometiment and problems of genetic engineering. Sometiment and problems of genetic engineering. Sometiment and problems of genetic engineering. Sometiment and problems of genetic en	Content emphasis emphasis emphasis emphasis emphasis emphasis s and problems of genetic engineering? lum, pp. 19–20) in the preceding section s include discussions about: on; e.g., anatomical evidence and fossil records? -11) X



3	The mechan isms of evolution; e.g., mutation, selection, speciation, adaptation, and extinction? (Science Framework Addendum, p. 18; Standaras, Number 15, p. S-11)	x			
	Factual inaccuracies, if any, in the preceding section				
. c	lassification				
T	o what extent does the textbook include discussions about:				
1.	The historical development of systems of classification; e.g., Aristotle and Linnaeus? (Standards, p. S-1, Number 3, p. S-5)			x	
2.	Identification and description of the five kingdom system of classifying living things? (Science Framework Addendum, p. 14)			x	
	Factual inaccuracies, if any, in the preceding section				
. E	nergy Processes				
T	o what extent does the textbook include discussions about:				
1.	The chemical basis of life; e.g., atoms, molecules, bonds, and reactions? (Science Framework Addendum, p. 24)			x	
2.	Human nutrition as related to everyday diet; e.g., food, vitamins, water, and minerals? (Science Framework Addendum, pp. 34-35; Standards, Number 8, p. S-7)		X		
3.	Cellular respiration? (Science Framework Addendum, p. 19; Standards, Number 1, p. S-4, and Number 4, p. S-5)		X	_	
4.	Photosynthesis? (Science Framework Addendum, p. 24; Standards, Number 11, p. S-9)	х			
5.	The conversion of matter and energy as it applies to living systems; e.g., conservation of energy and matter? (Science Framework Addendum, p. 24; Standards, Number 1, p. S-4)		X		
	Factual inaccuracies, if any, in the preceding section			7	



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
G. Ce	ells, Tissues, Organs, and Organ Systems					
To	what extent does the textbook include discussions about:					
1.	A historical perspective; e.g., Hook, Schleiden, Schwann, and Virchow? (Standards, Number 12, Activity Number 3, p. S-9)				X	
2.	The structures and functions of cells and cell components, including the similarities and differences between plant and animal cells? (Standards, Number 1, p. S-4, and Number 12, p. S-9)		; X			
3.	The cell cycle, including mitosis and meiosis? (Standards, Number 12, p. S-9)			X		
4.	The structure and function of DNA and RNA in cell replication and in the reproduction of organisms? (Standards, Number 12, p. S-9)		•	x		m =



. 5	The interrelationships among cells, tissues, organs, and organ systems within multicellular organisms? (Standards, Number 2, p. S-4)	X		
	Factual inaccuracies, if any, in the preceding section			
I. \	7iruses			
T	o what extent does the textbook include discussions about:			
1	. Characteristics of viruses? (Science Framework Addendum, p. 27; Standards, Number 3, p. S-5)	x		
2	. Reproduction of viruses? (Science Framework Addendum, p. 27)		X	
3	. Human diseases which involve viral pathogens? (Science Framework Addendum, p. 27; Standards, Number 17, p. S-12)		x	
	Factual inaccuracies, if any, in the preceding section			
M	Ionera			
T	o what extent does the textbook include discussions about:]	
1.	The major groups of monera? (Science Framework Addendum, pp. 14-15; Standards, Number 3, p. S-5)	x		
2.	The types of diseases produced by certain monera? (Science Framework Addendum, p. 27)		X	
3.	Reproduction in monera? (Science Framework Addendum, p. 26)		X	
4.	STIS issues; e.g., food production, waste disposal, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)	X		
	Factual inaccuracies, if any, in the preceding section			



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_		Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
J.	Pr	otists					
	То	what extent does the textbook include discussions about:					
	1.	The major groups of protists? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)			x		
	2.	Diseases caused by protists? (Science Framework Addendum, p. 27)				X	
•	3.	Reproduction in protists? (Science Framework Addendum, p. 26)				X	
	4.	STIS issues: e.g., food production, waste disposal, industrial products, and pollution? (Science Framework Addendum, p. 27; Standards, Number 16, p. S-11, and Number 17, p. S-12)			x		



	Factual inaccuracies, if any, in the preceding section				
ζ. F	ungi				
T	o what extent does the textbook include discussions about:			1	
1.	The major groups of fungi? (Science Framework Addendum, pp. 14-15, 27; Standards, Number 3, p. S-5)		x		
2.	Dis ases caused by fungi; e.g., athlete's foot, ringworm, yeast infection, smuts, and rusts? (Science Framework Addendum, p. 27; Standards, Number 4, p. S-5)			x	
3.	Asexual and sexual reproduction in fungi? (Science Framework Addendum, p. 26)			X	
4.	STIS issues; e.g., food (toxic mushrooms), beverages, or antibiotics? (Science Framework Addendum, p. 26; Standards, Number 17, p. S-12)	7	x		
	Factual inaccuracies, if any, in the preceding section				
. Pl	lants				
To	what extent does the textbook include discussions about:	,		•	
1.			x		
2.	The structures and the functions of the parts of plants? (Science Framework Addendum, p. 24; Standards, Number 10, p. S-8, and Number 11, p. S-9)		v		
			X		
5.	Response to stimuli? (Science Framework Addendum, p. 24)		х		
4.	Plant adaptations? (Science Framework Addendum, pp. 18, 22, and 24)		x		
5.	Asexual and sexual reproduction in plants? (Standards, Number 13, p. S-10)	x			



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	Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
L. Pl	antsContinued					
6.	STIS issues; e.g., the useful applications of plants and plant products? (Science Framework Addendum, p. 25; Standards, Number 10, p. S-8, Number 16, p. S-11, and Number 17, p. S-12)		x			
	Factual inaccuracies, if any, in the preceding section					
M. A	nimals					
Te	o what extent does the textbook include discussions about:					
1.	Invertebrates				,	
î (J	 Descriptions of the major phyla; e.g., porifera, coelenterates, worms, mollusks, echinoderms, and arthropods? (Science Framework Addendum, pp. 29-30) 		x			



b .	Structure and function of organs and systems? (Science Framework Addendum, pp. 28–29)		x		
c.	Growth and development? (Science Framework Addendum, pp. 30-31; Standards, Number 9, p. S-8, and Number 13, p. S-10)		x		
d.	Reproduction, including sexual and asexual? (Science Framework Addendum, p. 30; Standards, Number 13, p. S-10)		х		
e.	Behavior; e.g., social and reproductive? (Standards, Number 5, p. S-6)			х	
f.	STIS issues; e.g., agriculture, food, pests, and aquaculture? (Standards, Number 17, p. S-12)	х			
2. Ve	ertebrates (Nonhuman)				
a.	Description of major classes of chordates; e.g., fish, amphibians, reptiles, birds, and mammals? (Science Framework Addendum, p. 29)		x		
b.	Structure and functions of organs and systems? (Science Framework Addendum, pp. 28, 30; Standards, Number 7, p. S-7, and Number 9, p. S-8)		x		
c.	Growth, development, and embryology? (Science Framework Addendum, p. 31)		х		
d.	Sexual reproduction? (Standards, Number 13, p. S-10)			х	
e.	Behavior, e.g., social and reproductive? (Standards, Number 5, p. S-10)		x		
f.	STIS issues; e.g., wildlife "anagement? (Science Framework Addendum, p. 13; Standards, Number 16, p. S-11, and Number 17, p. S-12)		x		



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Content	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
M. Animals—Continued					
3. Vertebrates (Human) a. Structure, function, and maintenance of major body systems:					
(1) Nervous system and sense organs?		X			
(2) Circulatory system?		×			
(3) Digestive system?		x			
(4) Respiratory system?		x			
(5) Reproductive system?		x		. 4	
(6) Musculoskeletal system?		X			1~



(7) Excretory system?			x		
(8) Integumentary system?				X	
(9) Endocrine system? (Science Framework Adden	dum, p. 33; Standards, Number 7, p. S-7)		x		
b. Growth, development, and emb (Science Framework Addendum	ryology? a, p. 34; Standards, Number 7 and Number 8, p. S-7)		x		
c. Behavior, e.g., innate compared (Science Framework Addendum p. S-6)	with learned? , pp. 34–35; Standards, Number 5 and Number 6,		x		
d. Transmission, symptoms, and p (Standards, Number 17, p. S-12					X
issues, and substance abuse?	eling, noncommunicable diseases, environmental, pp. 12–13, 31, 37; Standards, Number 16, p. S-11,	x			
Factual inaccuracies, if any, in t	he preceding section		<u> </u>		

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II. LIFE SCIENCE: PROCESS SKILLS (STUDENT'S EDITION)

DESCRIPTIONS OF PROCESSES*

OBSERVING

- Seeing
- Hearing
- Feeling
- Tasting
- Smelling

The main route to knowledge is through observing, using all the senses. This process is a distinct one by which people come to know about the characteristics of objects and their interactions.

COMMUNICATING

- Silent
- Oral
- Written
- Pictorial

Objects are named and events are described by people so that they can tell others about them. Communicating is a fundamental human process that enables one to learn more about a greater range of information than could be learned without this process.

COMPARING

- Sensory comparisons
- Relative positive comparisons
- Linear comparisons
- Weight comparisons

- Capacity comparisons
- Quantity comparisons

Comparing is a distinct process by which people systematically examine objects and events in terms of similarities and differences. By comparing the known to something unknown, one gains knowledge about the unknown. All measurements are forms of comparing.

ORGANIZING

- Data gathering
- Sequencing
- Grouping
- Classifying

Knowledge of principles and laws is gained only though the systematic compiling, classifying, and ordering of observed and compared data. Bodies of knowledge grow from long-term organizing processes.

RELATING

- Using space-time relationships
- Formulating experimental hypotheses
- Controlling and manipulating variables
- Experimenting

Relating is a process by which concrete and abstract ideas are woven together to test or explain phenomena. Hypothetical-deductive reasoning, coordinate graphing, the managing of variables, and the comparison of effects of one variable on another contribute to the attainment of the major concepts of science.



INFERRING

- Synthesizing, analyzing
- Generalizing
- Recognizing and predicting patterns; stating laws
- Formulating explanatory models and theorizing

The process of realizing ideas that are *not* directly observable is the process of inferring. The process leads to predictive explanations for simple and complex phenomena.

APPLYING

- Using knowledge to solve problems
- Inventing (technology)

Use of knowledge is the applying of knowledge. Inventing, creating, problem solving, and determining probabilities are ways of using information that lead to gaining further information.

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REVIEW OF PROCESS SKILLS

To what extent are the following process skills taught throughout the textbook:	High emphasis	Substantial emphasis	Moderate emphasis	Limited emphasis	Not covered
1. Observing?	x				
2. Communicating?	X		<u> </u>		
3. Comparing?	X				
4. Organizing?		X			
5. Relating?				X	
6. Inferring?				X	
7. Applying?				X	

Science Framework Addendum, p. 5.

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^{*}Science Framework Addendum, pp. 4-5.

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III. LIFE SCIENCE: TEACHER'S EDITION

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the textbook include:				
1.	Alternative strategies for organizing the course? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2 and Number 4)			x	
2.	A range of suggested instructional activities? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 3)		X		
3.	Material that engages students in using higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			X	
4.	Varied activities to meet instructional needs of students with different learning styles and interests? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 1)		X		



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5.	Consideration of the instructional needs of limited-English-proficient students? (Science Framework Addendum, p. 103, "General Criteria")		x	
6.	Identification of process skills related to specific activities? (Science Framework Addendum, p. 104, "Content and Process," Number 6 and Number 7)	· · · · · · · · · · · · · · · · · · ·		X
7.	Instructional activities that integrate knowledge and skills learned in other disciplines; e.g., mathematics or history? (Science Framework Addendum, p. 104, "Content and Process," Number 5)		X	
8.	Suggestions for structuring group instruction; e.g., cooperative learning? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 2)	x		
9.	A listing of additional resources for extended and in-depth supplemental activities? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 3)	X		
10.	A variety of assessment techniques; e.g., number and types of questions such as essay, definitions, and discussion? (Science Framework Addendum, p. 104, "Assessment and Evaluation," Number 1 and Number 2)		X	

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IV. LIFE SCIENCE: STUDENT'S LABORATORY MANUAL

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Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
A. To what extent does the student's laboratory manual include:	1	· · · · · · · · · · · · · · · · · · ·) -	
1. Experiences that reinforce the major concepts covered in the student's edition? (Science Framework Addendum, p. 104, "Content and Process," Number 6)	# † :	x	! ! {	1
2. Directions for laboratory setup, procedures, and data reporting related to the laboratory experiences? (Science Framework Addendum, p. 104, "Content and Process," Number 8)	x		· mark. An mark of the color of	i
3. Information that emphasizes safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9)		• · · · · · · · · · · · · · · · · · · ·	X	1
4. Assignments that integrate knowledge and skills learned in other disciplines; e.g., reading and writing? (Science Framework Addendum, p. 104, "Content and Process," Number 5)	1	• • • • • • • • • • • • • • • • • • •	. X	



5.	Assignments that guide students toward using higher-order thinking skills? (Science Framework Addendum, p. 194, "Organization of Materials," Number 4)			x	
6.	Information that promotes sensitivity to the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)				х
	what extent are the following process skills taught throughout the laboratory manual:* Observing?	x			
2.	Communicating?	X			
3.	Comparing?	X			
4.	Organizing?		X		
5.	Relating?			X	
6.	Inferring?			X	
7.	Applying?				X

^{*}Science Framework Addendum, p. 5 and p. 104, "Content and Process," Number 7.



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V. LIFE SCIENCE: TEACHER'S EDITION OF THE LABORATORY MANUAL

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	Content	High emphasis	Moderate emphasis	Limited emphasis	Not covered
To v	what extent does the teacher's edition of the laboratory manual include:				
1.	Information that encourages the shared responsibility for safety in the science laboratory? (Science Framework Addendum, p. 104, "Content and Process," Number 9; "Teachers' Materials," Number 9)				x
2.	Opportunities to demonstrate the interrelatedness of scientific information and process skills? (Science Framework Addendum, p. 104, "Content and Process," Number 6)				x
3.	Material which guides students to use higher-order thinking skills? (Science Framework Addendum, p. 104, "Organization of Materials," Number 4)			-	x
4.	Opportunities to integrate knowledge and skills from other disciplines; e.g., writing of laboratory reports? (Science Framework Addendum, p. 104, "Content and Process," Number 5)				x



75.

5 .	Instructional alternatives as appropriate and necessary? (Science Framework Addendum, p. 104, "Instructional Strategies," Number 4)				x
6.	Resource lists for acquiring:				
	a. Equipment?	X			
	b. Chemicals?	X			<u> </u>
	c. Supplies?	X			
	d. Preserved and living specimens? (Science Framework Addendum, p. 104, "Teachers' Materials," Number 2)		x		
7.	inecessary solutions and recipes? (Science Framework Addendum, pp. 104-105, "Teachers' Materials," Number 2)			x	
8.	Information on the humane treatment of animals? (Science Framework Addendum, p. 104, "Content and Process," Number 8 and Number 10)			X	
9.	List of supplemental materials and resources? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 2f)				x
10.	Information about outdoor biology fieldwork? (Science Framework Addendum, p. 105, "Teachers' Materials," Number 7)				x

ERIC Full Text Provided by ERIC

APPENDIX

This Appendix contains information about the organization of the textbooks reviewed elsewhere in this publication. Please note that the descriptions were developed from unedited information provided by publishers. These descriptions were intended to be narratives of each textbook's table of contents. As such, reviewers are encouraged to examine carefully those textbooks which may be appropriate to their curricular needs.

Descriptions of Biology Textbooks
Addison-Wesley Publishing Company Biology: A Systems Approach, 1988386
Harcourt Brace Jovanovich, Inc. Biology, 1986387
D.C. Heath and Company Heath Biology, 1989388
Holt, Rinehart and Winston, Inc. Modern Biology, 1989389
Kendall/Hunt Publishing Company Biological Science: An Ecological Approach, 1987
Merrill Publishing Company Biology: Living Systems, 1986
Prentice Hall School Division (Formerly CEBCO—Allyn and Baco) Biology: The Study of Life, 1987392
Prentice Hall School Division Prentice-Hall Biology, 1987393
Prentice Hall School Division Silver Burdett Biology, 1986394
Scott, Foresman and Company Scott, Foresman Biology, 1988

Descriptions of Life Science Textbooks

Globe Book Company Pathways in Biology, 1979	39 c
D.C. Heath and Company Heath Life Science, 1987	
Holt, Rinehart and Winston, Inc. Holt Life Science, 1986	
Kendall/Hunt Publishing Company Biological Science: Patterns and Processes, 1986	
Merrill Publishing Company Biology: An Everyday Experience, 1988	
Merrill Publishing Company Focus on Life Science, 1987	
Scott, Foresman and Company Scott, Foresman Life Science, 1987	



PUBLISHER	Title	COPYRIGHT
Addison-Wesley Publishing Company	Biology: A Systems Approach	1988

Biology: A Systems Approach is a 26-chapter high school biology textbook, appropriate for tenth grade average and honors students; but it is not intended for advanced placement students.

The textbook emphasizes similarities among living things through the study of biological systems. The similarities are explained by comparing the main functional systems of four representative organisms: hydra, earthworm, grass-hopper, and human. The digestive, circulatory, skeletal, and reproductive systems are compared. Human systems are described throughout the textbook.

The following major topics are presented: an introduction to biology, cell structure and function, respiration, photosynthesis, genetics, evolution, reproduction, regulation, senses, environment, classification, behavior, health, and disease.

The Teacher's Edition begins with an overview for each chapter as well as teaching suggestions, extension materials, and answers to questions. The

overprinted student's pages contain information on resource materials, science background, and answers to section review questions.

The Biology: A Systems Approach Laboratory Manual contains 67 laboratory activities which follow the topics in the book. From one to five activities listed are related to each of the chapters in the textbook.

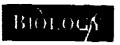
The teacher's edition of the Laboratory Manual has an introductory section which provides information on the types of laboratories, laboratory safety, materials needed, and preparation steps for solutions and culture media. The overprinted student's pages contain answers, teacher's instructions, safety hints, and background information.

Related available materials are:

Teacher's Resource Book Tests







BIOLOGY PUBLISHER TITLE COPYRIGHT	BIOLOGY PUBLISHER TITLE COPYRIGHT	Harcourt Brace Jovanovich, Inc.	Biology	1986
BIOLOGE	Biologs	PUBLISHER	Title	Copyrigh
		Biorock		

Biology, a phylogenetic approach to the study of biology, is designed for average high school students. One or more chapters in the 11 units contain discussions about characteristics of life, the cell, genetics and continuity of life, evolution, viruses and monera, protists and fungi, plants, invertebrates, vertebrates, human biology, and ecology.

Each of the 53 chapters contains . 'ese instructional features: "Outline," "Introduction," "Section Objectives," "Reviewing the Section," "Q/A" (questions and answers), "Feature Articles," "Highlight on Careers" or "Spotlight on Biologists," "Investigation," and "Chapter Review." A "BioTech" in each unit provides information about current medical, technological, and environmental issues. A reference section includes classification of organisms into five kingdoms; a section on laboratory procedures, safety guidelines, and key discoveries in biology; a glossary; and an index.

The Teacher's Edition includes answers to all textbook questions in addition to teaching aids, background, general information, and a chapter-by-chapter guide.

The laboratory manual, Laboratory Investigations: Biology, contains 88 additional investigations that apply chapter content, develop process skills, and follow a scientific method. The Teacher's Edition contains answers to all questions, hints on performing the investigation, directions for preparing materials, and a complete materials list

Other available materials are:

Computer Test Bank The HBJ BioFile, A Teacher's Resource Binder Overhead Transparencies Student Record Book Study Guide Tests

A 1989 edition of Biology is now available that reflects the pedagogy and ancillaries of the 1986 edition as well as containing an updated content, a new chapter on "Human Diseases," an expanded reference section, an interleaved Annotated Teacher's Edition, and some new ancillaries.



Publisher	TITLE	COPYRIGHT
D. C. Heath and Company	Heath Biology	1989

Heath Biology, newly revised, is organized phylogenetically and is intended for use by average tenth grade students.

The textbook is organized as follows:

- Unit One lays the foundation in scientific processes, provides an introduction to basic chemistry and biochemistry, and covers cell structures.
- Unit Two covers the treatment of genetics and evolution and concludes with material on classification using a five-kingdom classification system.
- Units Three through Six present studies of representative organisms from the five kingdoms.
- · Unit Seven focuses on human anatomy and physiology.
- Unit Eight synthesizes information covered in previous units while focusing on the study of how organisms at all levels of the food chain interact with their environment.

Special features in each chapter's review include techniques for concept mapping and case studies focusing on issues in bioethics.

The Teacher's Annotated Edition includes provisions for adapting material to the needs of students with varying academic abilities as shown in correlations provided for each chapter.

Heath Biology Laboratory Investigations includes 62 laboratory experiments. The program follows the chapter sequence in Heath Biology by reinforcing the concepts, demonstrating scientific principles, or reconfirming hypotheses found in the textbook.

The Teacher's Annotated Edition, Heath Biology Laboratory Investigations includes a laboratory safety section which provides instructions for disposal of reagents used in the manual. A prelaboratory section covers laboratory techniques and skills students need prior to doing an experiment.

Other available components are:

Heath Biology Computer Test Bank Heath Biology Instruction Organizer Heath Biology Overhead Transparencies, with work sheets Heath Biology Study Guide Heath Biosolve Software



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PUBLISHER TITLE COPYRIGHT	Druns rousm	Holt, Rinehart and Winston, Inc.	Modern Biology	1989
Brollogy	Brology	Publisher	Title	COPYRIGHT
		Biology		

Modern Biology, newly revised, is intended for average tenth grade students. The content is presented through the major themes of evolution, reproduction, development, relationship with structure and function, ecology, energy transfer, and science and society.

Each chapter is divided into sections. Each section begins with objectives and ends with five questions, one of which is a critical-thinking question. Each chapter contains an in-text laboratory and two pages that list testing materials. Special features include articles by scientists, descriptions of how process skills are used in scientific inquiry, special critical-thinking features, and sections on biotechnology and science and society.

The Teacher's Edition is organized so that teacher's material precedes each chapter. Planning and pacing guides, alternative strategies, safety information, activities for motivation and critical thinking, and procedures for laboratory preparation are included.

Modern Biology Laboratories is available in consumable and nonconsumable formats. In each of the 64 laboratory activities, strategies for using process skills are included. All biology laboratory activities are humane. An optional frog dissection is included. Computerized laboratory exercises are also available.

The Teacher's Edition, Modern Biology Laboratories contains safety guidelines, necessary information for laboratory setups, and answers to questions. Time for the completion of laboratories is also included.

Other components included are:

Blackline Masters Colored Overhead Transparencies Computerized Laboratories Computerized Testbank **Posters** Process and Vocabulary Skills Section Reviews Teacher's Resource Organizer Tests and Alternate Tests



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PUBLISHER TITLE COPYRIGHT

Kendall/Hunt Publishing Company

Biological Science: An Ecological Approach

1987

Biological Science: An Ecological Approach has been revised. This book is designed for the middle 60 percent (in interest and ability) of tenth grade students.

The content of the BSCS Green Version focuses on these major themes:*
"The World of Life: The Biosphere," "Continuity in the Biosphere," "Diversity and Adaptation in the Biosphere," "Functioning Organisms in the Biosphere," and "Patterns in the Biosphere." The organization is both sequential and cumulative.

The student's textbook contains five sections, which are divided into 25 chapters. Each chapter begins with an introduction and is followed by major headings. Guidepost questions are keyed to a major idea within the major heading. Also included are self-review questions, end-of-chapter summaries, application questions, problems, and suggested readings. Laboratory investigations are integrated with each chapter. Information is also provided about careers and research in biology and technology. Appendixes include material on laboratory safety and procedures.

The annotated *Teacher's Edition* includes introductory chapters on content reading and study skills as well as information about planning ahead, guidelines, objectives, and tactics. Lists of audiovisual materials and software are also provided. Teacher's material and answers to questions are located next to each investigation.

The Student Study Guide for Biological Science: An Ecological Approach includes activities keyed to each chapter. These activities focus on communication skills, science skills, and general cognition skills. Laboratory safety procedures are also included.

The Teacher's Edition, Student Study Guide for Biological Science: An Ecological Approach is a reprint of the student's edition with annotations which contain students' possible responses, skill objectives, and teaching directions.

Other components are:

Computer Disk of Test Items Resource Book of Test Items Teacher's Resource Book



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^{*}BSCS represents Biological Sciences Curriculum Study.

PUBLISHER	Title	COPYRIGHT
Merrill Publishing Company	Biology: Living Systems	1986

Biology: Living Systems is a first-year biology program for high school students of average ability. The program uses the systems approach to emphasize the unity that exists among the wide diversity of life forms. Students study a variety of organisms that carry out the same basic functions.

Topics are organized according to the following major themes:

- 1. Energy is required to maintain living systems.
- 2. Living systems require homeostasis.
- 3. Functions of living organisms are integrated.
- 4. Organisms interact with each other and their environment.
- 5. Traits of organisms are determined by heredity and environment.
- 6. Evolutionary relationships are the basis of taxonomy.

Special features include advances in biology, biographies of biologists, and laboratory investigations. Appendixes cover classification, scientific measurement, respiration and photosynthesis, and careers related to biology.

The Teacher's Annotated Edition provides planning help, outside resource references, and answers to textbook questions along with teaching suggestions.

The laboratory manual, Laboratory Biology: Investigating Living Systems, provides over 80 options for activities. Skill emphasis includes careful reading of experimental procedures, accurate data collection and interpretation, and graphing.

The Teacher's Annotated Edition, Laboratory Biology: Investigating Living Systems outlines teaching strategies and safety guidelines. Instructions for care of living organisms and for preparation of solutions for laboratory use are also included.

Other components are:

Biology: Living Systems (teacher's resource book)

Computer Test Bank

Probing Levels of Life: A Laboratory Manual, Pupil's Edition and Teacher's Annotated Edition (nonconsumable laboratory manual)
Transparency Package

The Biology Living Systems program has been revised and updated and is now available in a new 1989 edition.



PUBLISHER	TITLE	COPYRIGHT
Prentice Hall School Division (Formerly CEBCO-Allyn and Bacon)	Biology: The Study of Life	1987

Biology: The Study of Life is intended for students in grades nine and ten. The textbook contains eight units, each relating to a particular theme in biology. Each unit is divided into chapters, which, in turn, are divided into sections. Each section focuses on the development of one or two major concepts. Special features include information about the practical aspects of biology as well as descriptions of advances in the field and of career opportunities. Each chapter concludes with a review section, comprehension activities, and questions to develop students' critical and creative thinking. The textbook also includes a variety of references.

The annotated *Teacher's Edition* provides general program information, teaching suggestions, resources, and answers to all questions. Strategies to assist teachers in adapting the content to a variety of students' ability levels are also included.

The Laboratory Manual contains 57 experiments related to topics covered in the textbook. Each experiment begins with a background discussion and statement of objectives. The experiments are structured with step-by-step

instructions. Each laboratory includes questions which focus on analysis, interpretation, and critical as well as creative thinking.

In the teacher's edition of the Laboratory Manual, the pages of the student's Laboratory Manual are replicated with answers and observational notes. Each laboratory activity is preceded by a separate teacher's page that provides planning, background information, materials, preparations, and cautionary information.

Related available materials are:

Biology Critical Thinking Skills Transparencies Computer Programs for Biology Learning Program for Biology Learning Program for Biology, Annotated Teacher's Edition Teacher's Resource Book

An updated 1990 edition of Biology: The Study of Life is available.







PUBLISHER	TITLE	COPYRIGHT
Prentice Hall School Division	Prentice-Hall Biology	1987

Prentice-Hall Biology incorporates a phylogenetic approach in covering the content areas of a high school general biology curriculum. The intended audience is students in grades nine through ten.

To reinforce the concepts presented, a skills strand is integrated throughout the program. Visuals and special features illustrate the concepts as well as help to interpret the content. In addition, the special features in the textbook show how topics covered apply to everyday life.

The textbook is organized by chapters, which, in turn, are broken down into major sections and subsections. Each subsection covers a significant concept. Review questions are located at the end of each major section. Each chapter concludes with a "Laboratory Investigation" and "Chapter Review." The "Chapter Review" includes a summary of the major concepts, selected vocabulary, and a series of questions.

The Annotated Teacher's Edition, Prentice-Hall Biology includes a guide as well as answers to in-text questions. Suggestions for review, discussion, and activities are also included. A teacher's guide at the front of the book supplies additional information and is referenced throughout the textbook.

The consumable Laboratory Manual, Prentice-Hall Biology provides 48 additional laboratory investigations correlated with the chapters in the student's textbook. These laboratories are more extensive than those in the textbook. Each laboratory includes suggested supplemental activities.

The annotated teacher's edition of the Laboratory Manual provides guidelines and suggestion; along with answers to questions in the student's laboratory manual.

Other available components include:

Biology Courseware
Biology Critical-Thinking Skills Transparencies
Dial-A-Test^M Service
Teacher's Resource Book
Test Bank with Software

An updated 1990 edition of Prentice-Hall Biology is available.



PUBLISHER	TITLE	COPYRIGHT
Prentice Hall School Pivision	Silver Burdett Biology	1986

Silver Burdett Biology presents comparative systems within a phylogenetic framework. The intended audience is students in grades nine and ten with varying ability levels.

The textbook provides coverage of topics and skills inherent in a full year's survey course of biology. The skills strand emphasizes the development of critical thinking, problem solving, manipulative laboratory, and basic science skills. Each of the 38 chapters begins with a series of behavioral objectives. Each chapter is organized into several major sections, which, in turn, are divided into subsections covering a major concept. A review is provided at the end of the major sections and at the end of each chapter. Extension activities and bibliography are also presented.

The Teacher's Edition provides a guide plus annotated pages with background information, questions which stimulate critical thinking, teaching suggestions, and answers to questions posed in the student's textbook.

The Silver Burdett Biology Laboratory Manual provides 67 additional laboratory investigations correlated with the chapters in the student's textbook.

Each laboratory includes background information, objectives, step-by-step procedures, diagrams, safety alert symbols, and further investigation information. Answer sheets with prelaboratory questions, space to record data and observations, and conclusion questions are also included.

The annotated teacher's edition of the laboratory manual provides guidelines and suggestions as well as answers to the questions in the students' edition.

Other components are:

Biology Color Overhead Transparencies and Biology Courseware Computer Test Bank with Software and Dial-A-TestTM Teacher's Resource Package

A new edition of this textbook is available, tilled Biology: The Living World, 1989.



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PUBLISHER	TITLE	Copyright
Scott, Foresman and Company	Scott, Foresman Biology	1988

Scott, Foresman Biology is a comprehensive high school biology textbook intended for students from grades nine through twelve.

The textbook is organized into ten units and 28 chapters. Features such as "Using Technology" and "Issues in Biology" focus on the relationship between science, technology, and society. Review questions are located at the end of each lesson, while a hands-on activity in each chapter provides opportunities to develop process skills and reinforce concepts.

The annotated *Teacher's Edition* offers background information and teaching tips. "Advance Planning" suggestions and references occur at the beginning of the units and chapters. An insert at the front of the book provides an optional demonstration to introduce concepts for each chapter. Enrichment and reinforcement suggestions extend and supplement the lessons.

The Laboratory Manual, Scott, Foresman Biology provides additional activities correlated with the chapters in the student's edition. Scientific procedures and laboratory safety are presented. "Going Further," an optional feature at the end of many laboratories, offers additional investigations.

The Teacher's Edition, Laboratory Manual, Scott, Foresman Biology provides teacher's notes in the margins of the student's pages. The notes present extra background information, teaching strategies, extension questions, and enrichment activities.

Other components are:

Biology Courseware Series Study Guide Teacher's Resource Book



Publisher	TITLE	COPYRIGHT
Globe Book Company, Inc.	Pathways in Biology	1979
Olove Book Company, Inc.	I wishays in Diotogy	

Pathways in Biology provides a full year's life science program, presenting a systemic approach. The classification section is based on three kingdoms: animals, plants, and protists. Chapters within the textbook are divided into short sections that present topics at an appropriate reading level to aid students in learning important life science concepts. The textbook also includes illustrations, photographs, investigations, a glossary, and an index as well as review material in each chapter.

The Teaching Guide to Pathways in Biology is a softcover book that includes the philosophy of the program as well as suggested teaching strategies and motivational activities for each chapter. Answers to the questions in the student's textbook are also provided in the Teaching Guide.

The Pathways in Biology Laboratory Manual is available to supplement the student's edition of Pathways in Biology. Included in the manual are 47

investigations, 39 of which are designed for use in the classroom and in the science laboratory and eight of which focus on ecology.

A separate teaching guide is available for the Pathways in Biology Laboratory Manual. The teaching guide to the laboratory program provides teachers with background information on the investigation, suggested teaching demonstrations and strategies, and expected outcomes for each investigation. In addition, a laboratory-by-laboratory listing of required materials, information concerning the proper use of laboratory equipment and apparatus, and information regarding safety in the science laboratory also are provided.

A new phylogenetic textbook, Globe Biology, will be available in July, 1989.

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PUBLISHER	Title	COPYRIGHT
D. C. Heath and Company	Heath Life Science	1987

Heath Life Science, 1987, provides a phylogenetic survey of the five kingdoms (moneran, protist, fungus, plant, and animal), with a special emphasis on ecology. This textbook is intended for use with middle grade students; however, it is also used with less prepared students at the high school level. Textbook features include:

- Structured lessons beginning with a description of what the student will be expected to learn and closing with study questions which reflect the initial objectives
- Activities, generally two per chapter, ranging from paper and pencil to laboratory-based experiences
- · Chapter review items from the recall level through the analysis level
- Special highlights with information about careers, biographies, and science and technology

Each lesson in the expanded format of the *Teacher's Edition* includes a variety of teaching strategies. Suggestions for reinforcing the content and for

extending the lesson to other subject matter areas are provided at the end of each lesson.

The Heath Life Science Laboratory Manual provides a variety of laboratory activities. Two laboratories per textbook chapter are designed to be done in a typical middle school laboratory setting. The need for special equipment or materials has been minimized to coincide with normal laboratory facilities at this level.

The Heath Life Science Laboratory Manual, Teacher's Annotated Edition, contains a master list of materials needed for the laboratory experience as well as an extensive section on safety.

Other components include:

Heath Life Science Computer Test Bank Heath Life Science Evaluation Program Heath Life Science Software Heath Life Science Teacher's Resource Binder



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Publisher	TITLE	COPYRIGHT
Holt, Rinehart and Winston, Inc.	Holt Life Science	1986

Holt Life Science is a comprehensive science textbook intended for ninth grade students.

Each chapter has a five-part fo....at that contains objectives, motivation, concept development, a summary, and questions. Basic science process skills are emphasized as well as content.

Special features include "Compute!" which explores how to use computers to learn how science affects everyday living. "Careers in Science" features job and career opportunities.

The *Teacher's Edition* provides teaching strategies as well as a pacing chart, a section on safety in the science classroom, reinforcement/practice activities, and answers to questions.

Exercises and Investigations for Holt Life Science is a laboratory manual in a consumable format. It contains 22 laboratory activities which are closely cor-

related with the student's textbook. Each laboratory focuses on a specific science skill. Enrichment information, which is intended to extend a student's understanding of the content, is included with each "Laboratory" and "Review."

The Teacher's Edition, Exercises and Investigations provides teaching hints for each laboratory. "Safety Symbols and Guidelines" are listed as well as materials required for the laboratories in each chapter.

Other components include:

Test Bank (computerized)
Tests (duplicating masters)
Teacher's Resource Book



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PUBLISHER TITLE COPYRIGHT

Kendall/Hunt Publishing Company

Biological Science: Patterns and Processes

1986

Biological Science: Patterns and Processes is a high school science text-book designed for learners who are not experiencing success in school.

The textbook contains five units of study presenting five major biclogical topics selected for their critical importance in human life: "Ecological Relationships," "Energy Relationships," "Reproduction and Development," "Human Genetics," and "Evolution." Ideas and concepts within each unit are presented in small, sequential steps. The laboratory orientation of the textbook is intended to involve students in the scientific process. The textbook is softbound; pages are perforated and three-hole punched.

The teacher's edition contains, in addition to the entire student's textbook, introductory discussion questions, classroom demonstration ideas, and suggestions for homework assignments. Desired answers to discussion questions and completed versions of the graphs and charts are also included.

Another component related to this program is the Teacher's Resource Book!

Test Item File.



PUBLISHER TITLE COPYRIGHT

Merrill Publishing Company

Biology: An Everyday Experience 1988

Biology: An Everyday Experience is a high school biology program for noncollege-bound students with deficiencies in reading skills.

The content covers the complete range of basic biology topics. The vocabulary requirement has been reduced to meet the needs of students. Two laboratory activities are integrated with each chapter, and each activity is designed to be completed in one class period. The textbook includes special features on careers and current research.

The teacher's edition (in an oversized format) includes teaching ideas, performance objectives, unit and chapter overviews, planning charts, background information, and tips for preparing the laboratory activities in the textbook. Also included are optional reteaching alternatives, enrichment suggestions, and extension activities.

Biology Laboratory Experiences, a laboratory manual, provides over 60 additional activity options in a consumable format. The laboratories require

simple equipment, few solutions, and few live specimens. Some of the laboratories use model building; some use simulations.

The Teacher Annotated Edition, Biology Laboratory Experiences provides a guide which includes teaching strategies and materials lists. Annotations include teaching tips, answers to questions, sample data, drawings, and alternative procedures.

Other program components are:

Computer Software Test Generator
Review Guide (focuses on improving reading and study skills keyed to the student's textbook)
Review Guide, Teacher Annotated Edition
Teacher Resource Book
Transparency Package







PUBLISHER	Title	COPYRIGHT
Merrill Publishing Company	Focus on Life Science	1987

Focus on Life Science is designed as an introductory life science course to meet the needs of students in grades six through nine, performing at various ability levels.

The textbook is divided into seven units that are further divided into 24 chapters. Unit One (chapters 1 through 4) presents the nature of life as distinct from the characteristics for the nonliving. The scientific methods used to study organisms are also covered. Unit Two (chapters 5 and 6) identifies classification and functions of simple organisms. Unit Three (chapters 7 through 9) presents the classification, structure, and function of plants and their relationship to soils. Unit Four (chapters 10 through 13) presents a discussion of animal behavior and the features that separate the different animal phyla. Unit Five (chapters 14 through 18) focuses on a study of the human body and related health habits. Unit Six (chapters 19 through 21) covers general principles of heredity and evolution. Unit Seven (chapters 22 through 24) deals with the environment and human interaction with the environment.

The Teacher Annotated Edition contains planning guides and ideas for classroom instruction. All laboratory activities have preparation notes and answers to the questions.

The student's edition of the laboratory manual, A Learning Strategy for the Laboratory, coatains over 60 different laboratory activities.

The teacher's edition of the labor: tory manual provides answers to laboratory activities plus suggestions for quantities of materials to use.

Related available materials include:

Chapter Review Software

Evaluation Program (spirit duplicating masters)

Life Science Skill Cards

Review and Reinforcement Guide (teacher's edition and student's edition)

Teacher Resource Book

Test Generator Software

Transparency Package

The Focus on Life Science program has been revised and updated. It is now available in a new 1989 edition.



PUBLISHER TITLE COPYRIGHT

Scott, Foresman and Company Scott, Foresman Life Science 1987

Scott, Foresman Life Science presents science concepts appropriate for average seventh through tenth grade students.

Each of the 24 chapters begins with prereading questions, keyed to the lesson subheads, which, in turn, relate to the lesson review questions. Laboratory safety guidelines are stated in Chapter 1 so that students learn proper procedures before becoming involved in activities. Special features include two activities in each chapter: "Issues," which explores the sc 'al implications of scientific endeavors, and "Did You Know?" which expands the lesson content. The review section at the end of each chapter includes extra research problems and questions which call for critical thinking.

The front of the annotated teacher's edition provides an insert with an optional demonstration that may be used to introduce the content for each lesson. "Advance Planning" suggestions are located at the beginning of each unit.

The Scott, Foresman Life Science Activity Guide offers additional activities (spirit duplicating master format) for each of the chapters. The activities reinforce or expand concepts presented in the textbook. The materials and equipment required for each activity are minimal.

The teacher's edition of the Activity Guide provides overprinted answers on pupil's pages that have been reduced, a chapter-by-chapter materials list, and a master materials and equipment list.

Other components are:

The Science Square-Off (a software package) Study Guide Teacher's Resource Book

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Publications Available from the Department of Education

This publication is one of over 650 that are available from the California State Department of Education. Some of the more recent publications or those most widely used are the following:

ISBN	Title (Date of publication)	Price	ISBN	Title (Date of publication) Price
0-8011-0271-5	Academic Honesty (1986)	\$2.50	0.8011.0680 -	
0-8011-0722-9	Accounting Procedures for Student Organizations (1988)	3.75	0-8011-0060-2	Handbook for Teaching Japanese-Speaking Students (1987)\$4.50
0-8011-0272-3	Administration of Maintenance and Operations		0.0011-0291-7	Handbook for Teaching Pilipino-Speaking Students (1986)4.50
	in California School Districts (1986)	6.75	0-0011-0204-9	Handbook for Teaching Portuguese-Speaking Students (1983)4.50
0-8011-0216-2	Bilingual-Crosscultural Teacher Aides: A Resource	0.15	0-8011-0230-2	Handbook on Califor : Education for Language
	Guide (1984)	2 50	0.0011.0777.7	Minority Parents—Chinese/English Edition (1985)†
0-8011-0238-3	Boating the Right Way (1985)		0-6011-0737-7	Here They Come: Ready or Not-Report of the School
0-8011-0275-8	California Dropouts: A Status Report (1986)	2.50	0 0011 0724 0	Readiness Task Force (Summary) (1988)
0-8011-0783-0	California Private School Directory, 1988-89 (1988)	1400	*/-0011-0734-2	Here They Come: Ready or Not-Report of the School
0-8011-0747-4	California Public School Directory (1989)	14.00	0 0011 0726 A	Readiness Task Force (Full Report) (1988)
0-8011-0748-2	California School Accounting Manual (1988)	0.00	0-8011-0733-0	Here They Come: Ready or Not-Appendixes to the Full
0-8011-0715-6	California Women: Activities Guide, K-12 (1988)	2.50	0.0011.0314.1	Report of the School Readiness Task Force (1988) 16.50
2 Jul 1-0488-2	Caught in the Middle: Educational Reform for Young	3.30	0-8011-0712-1	History-Social Science Framework for California
	Adolescents in California Public Schools (1987)	£ 00	0.0011.0800.0	Public Schools (1988)
0-8011-0760-1	Celebrating the National Reading Initiative (1989)	5.00	0-8011-0782-2	Images: A Workbook for Enhancing Self-esteem and
0-8011-0241-3	Computer Applications Planning (1985)	6./3		Promoting Career Preparation, Especially for Black Girls
0-8011-0797-0	Desktop Publishing Guidelines (1989)	3.00		(1989)
1.8011-0740-0	Educational Software Preview Guide, 1988-89 (1988)	4.00	0-8011-0227-8	Individual Learning Programs for Limited-English-Proficient
7-8011.0489.0	Effective Practices in Achieving Compensatory	2.00		Students (1984)
0 0011 0407 0	Education Funded Cohools II (1007)	£ 00	0-8011-0767-9	Infant and Toddler Program Quality Review Instrument
0-8011-0041-0	Education-Funded Schools II (1987)	5.00		(1988) 2.00
J-0011-00-41-0	for California Bublic Cabacle (1997)		0-8011-0750-4	Infant/Toddler Caregiving: An Annotated Guide
).8011.0721.R	for California Public Schools (1987)	3.00		to Media Training Materials (1989) 8 75
7-0011-0751-0	English-Language Arts Model Curriculum Guide,		0-8011-0466-1	Instructional Patterns: Curriculum
1.9011.0796.5	K—8 (1988)	3.00		for Parenthood Education (1985)
7-8011-0780-3	Enrichment Opportunities Guide: A Resource for Teachers		0-8011-0208-1	Manual of First-Aid Practices for School Bus 25, 275 (1983) 1.75
3.8011 0710 S	and Students in Mathematics and Science (1988)	8.75	0-8011-0209-x	Martin Luther King, Jr., 1929—1968 (1983) 3.25
1 8011 1 000 A 7	Family Life/Sex Education Guidelines (1987)	4.00	0-8011-0358-4	Mathematics Framework for California Public Lc ols (1985) 3.00
7-8011-06 04- 7	Foreign Language Framework for California		U-8U11-U 664-8	Mathematics Model Curriculum Guide, K-8 (1987)
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